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NETWORKWORLD
BUYER'S GUIDES

Clear Choice Test: VoIP analysis tools

ClearSight's Analyzer wins our test of six VoIP analysis tools for the second year running. **PAGE 55.**

NETWORKWORLD

The leader in network knowledge ■ www.networkworld.com

September 18, 2006 ■ Volume 23, Number 36

Net management in Interop spotlight

BY DENISE DUBIE

Hot technologies, such as VoIP, security and wireless, will get their share of attention at this week's Interop conference in New York City, but it is the often-overlooked area of network management that could steal the show.

Vendors will swarm the event to demonstrate new products that go beyond basic device- and link-monitoring and focus on application performance management in

particular. The estimated 7,000 attendees will take in sessions such as "Are traditional network management tools irrelevant for converged networks?" and "Why is network management cool again?"

Vendors with network management expertise now more than ever are putting application-centric metrics and intelligence in their products, industry watchers

See Interop, page 16

Inside Interop

With 20 years under its belt, the Interop conference has seen more than 1 million attendees walk its floors since 1986. Here is what's on tap this week in New York City:

- Event planners expect 7,000 attendees, up 40% over last year's inaugural Interop New York event, held in December. Some 18,000 attended Interop Las Vegas in May.
- About 150 vendors will be represented at the show, which features 100 educational sessions, including tracks on data centers, wireless and mobility, network access control, and VoIP and collaboration.
- Keynote speakers range from Juniper Chairman and CEO Scott Kriens to CA

President and CEO John Swainson and Mark Bregman, executive vice president and CTO at Symantec.

• New is the Web 2.0 Summit, which show planners say is designed to help IT be more responsive and customer-facing as user demands for access to more information rises.



Kriens



Swainson

Follow along with our daily updates from the show. www.nwdocfinder.com/5114

Open source VoIP makes the grade

Texas university replaces Cisco CallManagers, Nortel PBXs with Linux-based VoIP and messaging servers.

BY PHIL HOCHMUTH

Some organizations consider taking the plunge off Big Iron PBX platforms into IP telephony as pretty daring, but that's nothing compared with what Sam Houston State University is doing. The south Texas school is moving thousands of users off a Cisco VoIP platform to an open source VoIP network based on Asterisk.

SHSU is in the process of moving 6,000 students, faculty and staff off Cisco CallManager IP PBX and a

legacy Nortel Meridian PBX and on to Linux servers running Asterisk, which includes call processing, voice mail and public switched telephone network (PSTN) gateway functionality.

The driver for this project was cost, said Aaron Daniel, senior voice analyst at the school.

"We thought it would be more cost effective in the long run to go with an open source solution because of the massive amounts of licensing fees required to keep the Cisco CallManager network up and running," said Daniel, who last week gave a presentation on his migration project at the VON show in Boston.

More from VON: Regulation could stifle video innovation, speaker warns. Page 10.

See Sam Houston, page 65

Federal agencies scramble to meet security deadline

BY ELLEN MESSMER

Two years ago President George Bush ordered the federal government to be ready by this Oct. 27 to issue a standards-based identity card that federal employees and government contractors would use for computer and building access.

The intention of the order, known as the Homeland Security Presidential Directive 12 (HSPD-12), was to usher in a new generation of encryption-based smart cards with biometrics and photos to be used government-wide for physical and logical access. The Personal Identity Verification (PIV) program, as it's come to be called, has federal agencies scrambling to issue PIV identity cards by the deadline, but it is unclear if they will be able to meet that goal.

For one, the \$104 million HSPD-12 services contract, awarded last month by the General Services

See PIV, page 14

CLEAR CHOICE TEST
ANTISPYWARE
GATEWAYS

We bombarded seven antispyware gateways with 70 types of malware, measuring for accuracy and performance. FaceTime's RTGuardian appliance came out on top.
See results, Page 51.

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_INFRASTRUCTURE LOG

_DAY 28: These slow, inefficient boxes don't have enough power to run my high-end business apps. They can't do anything. Though I guess crashing counts as doing something.

_Need sleep. Will try to dream that I am I.T. King of a distant planet that only produces stupefyingly powerful servers.

_DAY 30: I've taken back control, thanks to the IBM System x™ server with the AMD Opteron™ Processor. It has more power and more efficiency than I ever imagined in a standards-based server. The PowerExecutive™ tool assigns power as needed for each server. It helps optimize our power consumption. Maximize performance. Increase reliability. I can finally sleep in my own bed again.

_I have taken back control. I am Ned, benevolent I.T. King of this...uh, data center.



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Newsbits

N.Y.C. awards \$500M broadband wireless pact

■ In a blow to Motorola, New York City last week selected rival Northrop Grumman for a five-year, \$500 million contract to provide a broadband wireless network for first responders. Just a day after the nation reflected on the fifth anniversary of the Sept. 11, 2001, terrorist attacks, city officials announced they had hired Northrop Grumman to upgrade their mobile wireless network with high-speed data and video capabilities. The new network will support all of the city's public safety agencies including police, fire and transportation. Northrop Grumman will provide a mobile broadband wireless network using technology from IPWireless of San Bruno, Calif., that supports the Universal Mobile Telecommunications Systems standards. Other subcontractors on Northrop Grumman's team are Sprint Nextel and Transvideo Communications, which will supply spectrum, and Cisco, which will provide switches and routers.

Court sentences two men in Zotob worm case

■ A court in Morocco last week sentenced 19-year-old Farid Essebar to two years in prison, and 21-year-old Achraf Bahloul to one year in prison on charges related to writing computer viruses, illegal access to computers and conspiracy to commit computer fraud. The two students were found guilty for roles they allegedly played in unleashing the Internet Zotob worm last year that affected companies including CNN, The New York Times, Walt Disney, Kraft Foods and DaimlerChrysler.

FTC pulls plug on four spam operations

■ The Federal Trade Commission has shut down four illegal e-mail spamming operations, including one that offered the opportunity to "date lonely wives," the agency said last week. Two of the other operations hijacked the computers of third parties and used them to spam customers with sexually explicit e-mail, the FTC said. The FTC charged the four operations with violating the CAN-SPAM Act. Cleverlink Trading and its partners will relinquish \$400,000 in spam-related gains to settle FTC charges. In a second case, the FTC

See News Briefs, page 6

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CLEAR CHOICE TEST: ANTISPYWARE GATEWAYS

We bombarded seven antispayware gateways with 70 types of malware, measuring for both accuracy and performance. FaceTime's RTGuardian appliance came out on top. See results, Page 61.

Clear Choice Test: VoIP analysis tools

ClearSight's Analyzer wins our test of six VoIP analysis tools for the second year running. PAGE 55.

Newsbits

News Briefs

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charged Zachary Kinion with sending spam hawking adult sites, mortgage rates and privacy software, and paying other spammers commissions to send spam messages for him. Another spam operation used spam zombies — computers used without their owners' knowledge — to conceal the source of sexually explicit spam. The fourth operation used spam to drive traffic to Web sites by third parties, the FTC said.

FBI floats wiretapping proposal

■ Foreign Internet service and applications providers would be required to base the servers they use for U.S. customers inside the country, under a proposal from the U.S. Department of Justice. The department and its FBI division are taking that message to Congress and asking lawmakers for a broad rewriting of U.S. wiretapping rules. Some members of Congress, however, have criticized the Chinese government for a similar law requiring Internet providers to locate their servers inside China's borders, saying it allows the Chinese government to censor and monitor Internet traffic. The Department of Justice proposal, which would amend a 1994 telephone wiretapping law called the Communications Assistance for Law Enforcement Act, intends to allow the U.S. government easier access to servers so it can monitor communications.

Intel, Siemens team on secure VoIP

■ Intel and Siemens have agreed to collaborate in the development of new enterprise communication systems using VoIP technology. The world's largest chip maker and the German industrial conglomerate will fund and conduct research focused on secure wireless networks and real-time communications using VoIP technology, they said last week. The goal is to develop VoIP-based systems based on Intel's dual-core chips and rack-mounted servers and on Siemens' HiPath 8000 and OpenScape telecom technology. The companies plan to demonstrate the first wave of their findings at an undisclosed Intel laboratory by year-end. Siemens is transferring its telecom and enterprise communications manufacturing operations to new joint ventures, including one with Nokia.

State could indict HP officials

■ The state of California is investigating the actions of HP officials and the private investigators they used in an internal probe of the company's board of directors. The state has enough evidence to indict people within HP and contractors outside the company, confirmed Thomas Dressler, a spokesman for California Attorney General Bill Lockyer. Lockyer is working with Massachusetts

officials to pursue the case, according to a spokeswoman for the Massachusetts attorney general's office. HP has acknowledged that, to discover the source of press leaks about board deliberations, it hired a private investigation firm to pose as suspected board members and journalists to convince the phone company to disclose private phone records. This is a practice known as pretexting. HP announced last week that CEO Mark Hurd will replace Patricia Dunn as board chairman in January; Dunn had ordered the investigation. (See related story, Page 31)

Sun releases servers, workstations

■ Sun last week announced additions to its server and workstation lines with the Sun Fire and Sun Ultra. The company debuted Sun Netra blade

{quote of the week}
{quote of the week}
{quote of the week}

"We thought that it will be more cost effective in the long run to go with an open source solution, because of the massive amounts of licensing fees required to keep the Cisco CallManager network up and running."

Aaron Daniel, senior voice analyst at Sam Houston State University

See story on page 1

servers and claimed a nearly 20% performance improvement for its Sun Fire workgroup servers. They will use Sun's UltraSPARC III processors and Solaris operating system. Sun said its new Ultra 25 Workstation produces a 300% increase in performance. It comes preinstalled with Solaris 10, Sun Studio, Sun Java Studio Creator and Sun Java Studio Enterprise. The company also said its Sun Fire T1000 system provides 23% greater availability and as much as 300% better performance for disk operations. Sun said it soon will announce new Sun Fire systems based on the Rev F version of Advanced Micro Devices' Opteron processor.

Former Novell head quits board



Jack Messman

■ Novell's former Chairman and CEO Jack Messman, who was ousted from those positions in June, has quit the company's board of directors a month and a half earlier than had been previously announced. Messman quit Novell's board Sept. 11, a company spokesman confirmed last

The Good The Bad The Ugly

< Read the very fine print. Xerox scientists have developed a font so small that you need a magnifying glass to read the words. The font is 1/100th of an inch high and is designed to help make birth certificates and other valuable documents harder to forge.

Dell: Share the blame. Dell disclosed Monday that it might have to restate recent earnings statements because of discoveries made by the Securities and Exchange Commission, prompting company founder and chairman Michael Dell to defend his embattled chief executive, Kevin Rollins. "We run the company together, so if you want to blame somebody, you can blame me too," Dell said.

DDoS getting worse. According to a new survey of 55 network operators, the distributed denial-of-service attack problem is getting worse (disclaimer: the survey was conducted on behalf of a company that sells anti-DDoS products). Particularly worrisome is the size of the attacks, which are getting into the 1Gbps to 10Gbps range, according to 35 of the respondents. See story at www.nwdocfinder.com/5115

week. In June, Novell said Messman would remain on its board until Oct. 31. Novell made a brief 8-K filing to the Securities and Exchange Commission stating that Messman told the board Sept. 8 that he would resign from the board effective three days later. "This was just a personal decision by Jack," the Novell spokesman wrote in an e-mail. "If there had been any substantive disagreement with the board leading to his resignation, we would have had to state that in the SEC filing."

Carriers unite for next-gen services

■ Some of the world's biggest cellular operators have gotten together to promote their vision of what next-generation mobile technology should look like. Sprint Nextel, Vodafone, China Mobile Communications, Orange, NTT DoCoMo, KPN and T-Mobile International announced last week they have formed the Next Generation Mobile Networks initiative. NGMN, a nonprofit group based in London, won't push a particular type of network but rather a set of guidelines that future technologies should follow, says Steve Falk, vice president of global standards at Sprint. "We think that we can speak with a more organized and concerted voice that we have in the past," he says. Vendors and standards organizations had stronger voices in the development of 2G and 3G systems. Carriers will represent the interests of their customers, the end users, he says.

COMPENDIUM

Oldies but goodies

Thanks to the miracle of YouTube, you can once again see the classic 'Net video of the cube dweller destroying his PC when it doesn't work — and a sequel showing what happens when the PC fights back. **Find out more at www.nwdocfinder.com/5198.**



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■ **Getting a Cisco security box to work.** User smilersvay recently bought a Cisco ASA 5510 Adaptive Security Appliance. Now he needs help configuring it to allow Internet and e-mail access to his users. Suggestions welcome at www.nwdocfinder.com/5187

■ **Patricia Dunn's resignation.** Many bloggers criticized not just her actions but the way HP let her stay on its board of directors. One NetworkWorld.com user, however, took the contrary view, saying she should be congratulated for trying to discover who was leaking information about the company. What do you think? www.nwdocfinder.com/5194

■ **Dealing with users.** In the forum on our story on what users say about IT professionals, one IT manager replies: "Most times, users just nod and smile when I make a request, then go ahead and do what they want to anyway. Surfing Myspace, installing any old program, putting files in MyDocuments, changing data directories with drop and drag, twiddling with printer settings. It's really a problem with management discipline." www.nwdocfinder.com/5199

■ **Resolving a wireless issue.** Seems some folks are having problems getting internal Dell wireless cards to work with Linksys wireless routers. One user says he came up with a fix after talking to support at both companies: "I noticed that the Linksys router was using Channel 6 on the wireless link. I took a look at the different channels and the frequencies that each one uses. I decided to use 11 and 'boom!' It worked like a charm." www.nwdocfinder.com/5101

■ **Asterisk ready for prime time?** One user thinks the open source IP PBX is not ready for the enterprise because it has no secretarial multiuser support. Another user says it's easy enough to find a tandem solution for that. What do you think? www.nwdocfinder.com/5112

BLOGOSPHERE

'Stalker-ish' and 'creepy'

Plus: Dell's limits, vicious PCs and IT stereotypes

Facebook may have gone a step too far with personal information, writes columnist Linda Musthaler: "It seems that Facebook just started amplifying the embarrassing tidbits of information by publishing information as news feeds. When a guy breaks up with his girlfriend, it can be published as a news headline to his Facebook buddies. This is done without the guy's permission. The new media has hit a new low. Facebook subscribers call the new headline format 'stalker-ish' and 'creepy.'" www.nwdocfinder.com/5106

The PC bites back Executive Editor Adam Gaffin has been watching videos online again. This time he pulls out an oldie but a goodie — in which a guy takes out his frustration on his poor PC — but also links to the sequel, where the PC has its day. www.nwdocfinder.com/5108

Study in IT stereotypes News Editor Paul McNamara relates the results of a survey that indicates the basic stereotypes about IT people and the clothes they wear are in full effect. As McNamara says, "An appealing portrait this is not." Especially the bit that says, "IT workers are 32% less likely to wear clean clothes every day of the week than business managers." www.nwdocfinder.com/5109

Dell has limits to customization Note to vendors: Never inconvenience the friend of a blogger. Lab Alliance member James Gaskin writes in his blog that his friend ordered a desktop and a Zip drive from Dell — but the company wouldn't install the drive in the box.

www.nwdocfinder.com/5107

IT VIDEO

Hot Seat interviews, the coolest tools, and more



Hot Seat:
A Better
NAC plan
than
Cisco?

StillSecure CEO Mitchell Ashely says his company offers greater interoperability and broader security than Cisco. www.nwdocfinder.com/5195



Cool Tools:
Not driving him
crazy.
Keith

Shaw shows off some really cool in-car gadgets that make the driving experience easier for gadget fans. www.nwdocfinder.com/5196



From the lab:
IPS pitfalls
to avoid.
Lab
Alliance's

David Newman gives you an in-depth look at our intrusion-prevention systems that were tested, and some of the hurdles to look for when evaluating IPS for your own network. www.nwdocfinder.com/5197



Find the answers to these prickly problems online.

■ **This week:** Essential tools for trips to remote offices.

Help desk guru Ron Nutter helps a user travel light — by highlighting the most essential tools for those trips to remote offices.

Help Desk response:
www.nwdocfinder.com/5102

The experts at the Wireless Vulnerabilities and Exploits project explain the differences between WPA and WPA2 encryption.

Help Desk response:
www.nwdocfinder.com/5103

Storage newsletter writer Mike Karp looks at disaster planning five years after Sept. 11. Are you ready? He looks at a tool to make RSS generation easier.

Help Desk response:
www.nwdocfinder.com/5105

BEST OF NW'S
NEWSLETTERSShould VPN
be combined
with VoIP?Plus: WAN tech tips;
exploding servers.

VPMS: There are practical reasons for combining VPN technology with VoIP, but the blend imposes security on the VoIP signaling and the packets carrying the voice packets themselves. Senior Editor Tim Greene examines the pros and cons of carrying voice over VPNs.

www.nwdocfinder.com/5188

Convergence: Analysts Steve Taylor and Larry Hettick share advice from an expert about considerations when looking for a hosted VoIP service.

www.nwdocfinder.com/5189

Security strategies: How will your organization cope with unfavorable news? Will you delay responses to legitimate questions? Suppress the truth? Or will you focus on clear, timely answers to the questions? M.E. Kabay reports.

www.nwdocfinder.com/5190

Servers: YouTube is a cornucopia of video mastery and Senior Editor Deni Connor spent some time seeking out some of the hilarious, cringe-worthy and downright nasty home videos of some servers and their long-suffering administrators. Read, watch and wonder just what goes on in other people's data centers.

www.nwdocfinder.com/5191

Network optimization: Netcordia CEO Terry Slattery shares his tech tips with Senior Editor Denise Dubie. He discusses how to determine routing origins.

www.nwdocfinder.com/5192

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Video over IP the next battleground

BY TIM GREENE
AND PHIL HOCHMUTH

BOSTON — The scope of the Voice on the Network conference, which was staged for the first time 10 years ago to fight regulations stifling development of VoIP, was broadened in Boston last week to include video over IP, and the early fight might be about regulation all over again.

VON founder Jeff Pulver said he expects the FCC to push regulations that might be well-intentioned but nevertheless have the effect of hindering the growth of Internet video just as

it is taking hold.

He pointed to comments at VON by FCC Commissioner Deborah Tate that the FCC probably will consider regulations to ban child pornography on the Internet. Those regulations could restrict the development of legitimate content, he said. "I consider it a warning shot," Pulver said.

The experience VON founders gained by lobbying Congress and testifying before the FCC to protect VoIP from phone regulations will help with this new battle, he said. "The VON coalition will take people through the stages of

what's going to happen," he said.

VON's success and the proliferation of VoIP have gone hand in hand. This year the show drew nearly 10,000 people to the Boston Convention Center, a far cry from the 240 people who attended the first VON 10 years ago at a hotel in the Soho section of New York City. While this year Pulver looked ahead to the coming of video over the 'Net, most of the products and services in show booths still focused on VoIP, with security a key theme.

During seminars on the topic, users were urged to build security into their VoIP plans rather than trying to tack it on later. For instance, speaker Vincent Kasabian, senior network engineer at Liberty Mutual, said VoIP security is a fundamental part of the network because the company's wireless LANs (WLAN) were installed to support mobile voice.

Just as corporate security experts have worried that wireless data networks are vulnerable to attackers and eavesdroppers, so they should worry about VoIP over Wi-Fi calls being picked up, he said. "There are certainly security concerns."

The company separates voice from data on its wired network via virtual LANs, he said. This helps protect VoIP from data infrastructure attacks that monopolize bandwidth, he said.

Liberty Mutual has two WLANs, one based on 802.11a and one on 802.11g. "The idea is that the 802.11a radios provide more data throughput, while the 802.11g radios are dedicated to voice only," Kasabian said. "I can have separate security policies on the 802.11g radios vs. the 802.11a radios."

The data wireless network already uses the 802.11i standard, which includes encryption and port authentication. "We'll soon be migrating to 802.11i for voice as well," he adds.

Vendors are starting to recognize the importance of encrypting VoIP traffic to protect confidentiality. For example, BorderWare announced at the show it is licensing phone-to-phone authentication encryption software from Zfone, a company founded by Phil Zimmerman, the inventor of Pretty Good Privacy data encryp-



VON Founder Jeff Pulver warned show attendees in Boston last week that possible FCC moves could hinder legitimate IP video content development.

tion software. The plan, BorderWare said, is to integrate the software with its SIPAssure firewall.

VPN hardware maker KoolSpan said it has a deal with ruggedized PDA vendor mobID to embed KoolSpan's VPN encryption technology in mobID's ruggedized handheld computers that support VoIP. All transmissions from mobID's devices could be encrypted. The devices are used primarily by the military to scan fingerprints, faces and voices to determine whether a person is a terrorist. They also communicate back to central locations.

Such security concerns are warranted given the proliferation of tools that help hackers, said another VON speaker, Mark Williams, vice president of Tactical Security, a company that advises and trains businesses in IT security.

Tools meant to analyze traffic can zero in on real-time protocol packet streams for eavesdropping or be copied to files that can be listened to later, he said. Voice over Misconfigured IP Telephony is a tool designed specifically to do this, but the analyzer Cain can do the same and has recently been updated with a VoIP-specific tool. Similarly, Wireshark captures traffic and, via a more cumbersome route, produces the same results. "Every tool can be misused," Williams said.

Although VoIP is likely to domi-

nate at VON for some time, Pulver said video over IP will grow rapidly and drive innovation and spending. As video on demand replaces traditional TV, the technology will lend itself to more sophisticated technologies for selling products.

It is possible, for instance, to code a video so a viewer could run a cursor over the shirt an actor is wearing and right click on it to find out more about it and left click to buy it, Pulver said.

Advertisers could tap the demographics of all viewers and personalize advertisements that come along with video content. "It's totally intrusive, but trust me, it could happen," he said.

At the same time, sharing similarities with TV networks could attract the attention of government entities that tax and regulate network franchises.

The FCC, which regulates broadcast and cable television, might try to regulate these personal networks as well because they are "TV-like," he said. "There are ways to fight this," he added. "Don't let regulation get in the way of your innovation." ■

◆ Editor in Chief John Dix notes how VON officials are looking to the future with voice over IP. Page 38.

Web services techs set free by Microsoft

BY JOHN FONTANA

SANTA CLARA — In a move mostly designed to open up its identity infrastructure, Microsoft said last Tuesday that it would drop intellectual-property and patent claims to 35 Web services protocols it has developed and make them available license-free for anyone to use.

At IDG's annual Digital ID World conference, the company quietly issued the Microsoft Open Specification Promise (OPS), which gives developers free access to many of the Web services protocols Microsoft has developed over the years.

The protocols include the current versions of protocols in the WS-* security stack and those that are used as the foundation for the company's year-old Identity Metasystem infrastructure and its InfoCard and companion CardSpace technologies.

The announcement was posted on the blog of Kim Cameron, Microsoft's identity architect, at www.nwdocfinder.com/5185. It included endorsements from third-party rivals, such as Red Hat. Cameron and colleague Mike Jones worked to get OPS approved in the executive and legal ranks at Microsoft. Bob Muglia, senior vice president of Microsoft's server and tools business and Microsoft's patent lawyers signed off on the OPS document Tuesday.

Cameron wrote on his blog: "The goal was to find the simplest, clearest way of assuring that the broadest possible audience of developers could implement specifications without worrying about intellectual-property issues — in other words, a simplified method of sharing 'technical assets.'"

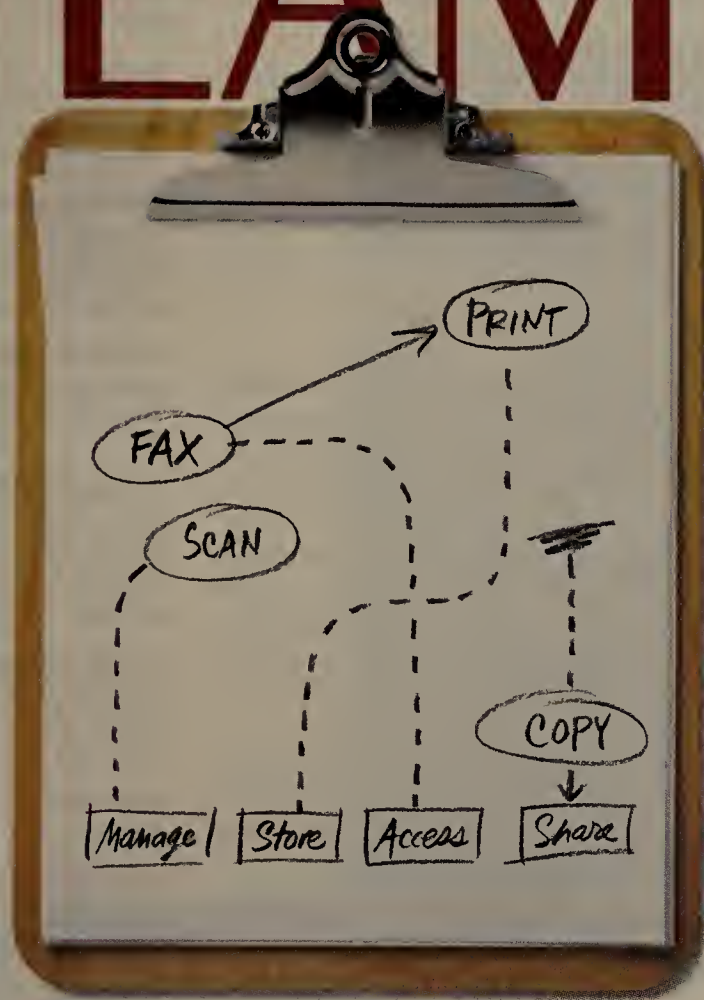
OPS is a legal document that hinges on a promise not to assert (that is, enforce patents). It is self-executing, meaning developers don't have to sign anything to use the protocols. Similar legal documents not to assert rights over patents have been used recently by IBM, Sun and Oracle. OPS is similar to another promise not to assert patents that Microsoft made last year regarding its Office 2003 XML Reference Schema.

There is no doubt, however, that Microsoft's OPS will be subjected to interpretation and scrutiny over certain provisions, such as the fact that it covers only current versions of the protocols and reserves commitments on future iterations. Nonetheless, Microsoft hopes OPS aligns closely with open source licensing.

"This is a significant step forward," says Jamie Lewis, Burton Group president and CEO. "Microsoft has been talking consistently about want-

See Microsoft, page 12

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Symantec, Juniper unite on security

BY ELLEN MESSMER

Juniper Networks and Symantec last week announced they have formed a broad strategic partnership that includes product development in areas of unified threat management, intrusion-prevention systems and endpoint compliance.

Scott Kriens, chair and CEO of Juniper, and John Thompson, chair and CEO of Symantec, said Juniper will take the lead in building hardware appliances, with Symantec providing software-based antivirus and antispam content filtering. The partnership ends Symantec's struggle to develop appliance-based hardware that is the foundation for Symantec Gateway Security (SGS) products.

"Customer hardware development was not our forte," Thompson said.

Jeremy Burton, group president of security and data management at Symantec, indicated that the company will provide customer support for SGS appliances for the next three years or so, with content updates. "But we won't materially enhance the features

sets," he said. When customer contracts expire, Symantec will recommend a "comparable Juniper box," he said.

For Juniper, the partnership that brings together the marketing, sales and engineering teams of the companies is expected to lead to the development of new UTM appliances, especially for service providers.

Hitesh Sheth, vice president of enterprise products and solutions at Juniper, said the company's Secure Services Gateway line of UTMs is for enterprises and carriers. While Symantec provides only antispam content filtering for Juniper UTM appliances, its antivirus content filtering will be added in the future. Future UTM products developed with Symantec will rely on Juniper's firewall and IPS technology, he said.

In addition, the firms will collaborate on developing new endpoint security software, starting with licensing Juniper's 802.1x supplicant software to Symantec.

The strategic partnership is not exclusive, however, and Juniper and Symantec do not

foresee changes associated with vendor partners that already exist. For instance, Kaspersky Lab is an antivirus software provider on Juniper security gear.

Gartner analyst John Pescatore said the underlying motivation behind the Juniper-Symantec partnership appears to be "the enemy of my enemy is my friend" — that enemy being Cisco.

Other UTM news includes a partnership agreement being announced this week between Crossbeam Systems and Internet Security Systems (ISS) to collaborate on a carrier-class UTM appliance.

According to Clarence Morey, director of market development at ISS, and Throop Wilder, vice president of marketing at Crossbeam, the companies will work together on a high-end device that carriers, wireless providers and ISPs could use to provide managed IPS services.

The UTM appliance, expected out later this quarter, would be based on virtual-domain technology and IPS filtering from ISS integrated into a Crossbeam-built box. ■

Microsoft

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ing to see not only interoperability but functional equivalency for its identity technology on other platforms."

While licensing was the major hurdle, lesser details also have to be worked out, including the meta models and schema that Microsoft used to implement its own identity technology, such as InfoCard and CardSpace. Microsoft has not reached decisions about how that will be accomplished.

"The protocols alone do not give you functional equivalency," Burton Group's Lewis says. "But clearly Microsoft is serious about seeing the functional equivalency of CardSpace moving beyond the Windows platform, and this is a huge step that changes the context of these discussions."

One of the immediate changes is that any independent software vendor now can freely develop client interfaces and back-end components that are interoperable with Microsoft's Identity Metasystem, which was introduced last year.

The major focus is on InfoCard and the user interface built on that technology called CardSpace, which is slated to ship with Vista later this year. CardSpace presents users with

Unlocking IP chains

Microsoft last week said it would cut intellectual property and patent claims to 35 Web services protocols it has developed for security and identity management.

WS-Addressing	WS-RM Policy
WS-AtomicTransaction	Remote Shell Web Services Protocol
WS-BusinessActivity	WS-SecureConversation
WS-Coordination	WS-Security: Kerberos Binding
WS-Discovery	WS-Security: SOAP Message Security
WSDL	WS-Security: UsernameToken Profile
WSDL 1.1 Binding Extension for SOAP 1.2	WS-Security: X.509 Certificate Token Profile
WS-Enumeration	WS-SecurityPolicy
WS-Eventing	SOAP
WS-Federation	SOAP 1.1 Binding for MTOM 1.0
WS-Federation Active Requestor Profile	SOAP MTOM / XOP
WS-Federation Passive Requestor Profile	SOAP-over-UDP
WS-Management	WS-Transfer
WS-Management Catalog	WS-Trust
WS-MetadataExchange	WS-I Basic Profile
WS-Policy	Web Single Sign-On Interoperability Profile
WS-PolicyAttachment	Web Single Sign-On Metadata Exchange Protocol
WS-ReliableMessaging	

an identity selector, basically a palette of secure identity cards that can be used to authenticate to various network resources or Web sites.

Under OPS, third parties can develop their own user interfaces

similar to CardSpace, free from contractual obligations, and provide an identity client on any platform and interoperate with the Identity Metasystem back-end infrastructure.

The open source Higgins

Project, begun last year by IBM, Novell and a handful of academics, plans to use the protocols as part of its ongoing work to create a software framework that makes it easier for IT to integrate identity systems.

OPS also opens access to protocols such as WS-Trust, the foundation for the back-end infrastructure of Identity Metasystem. That infrastructure hinges on Microsoft's Security Token Service, a lightweight gateway based on WS-Trust for servers and clients that negotiates the exchange of security tokens, such as Kerberos or the Security Assertion Markup Language.

Some of the 35 protocols Microsoft has singled out have passed through the standards process, mainly at the Organization for the Advancement of Structured Information Standards, which does not require vendors to relinquish their intellectual-property rights. The OPS, however, applies in either case. Some have been approved by OASIS; others have not been submitted to a standards process.

Many of the 35 protocols were developed in conjunction with IBM, which has made a similar move to free intellectual-property constraints on the protocols. IBM is building many of the protocols into its open source Eclipse framework. ■

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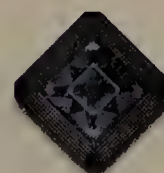
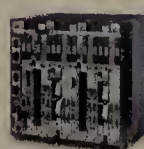
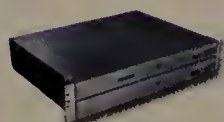


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IT SERVICES AND SOFTWARE ENTERPRISE NETWORKING AND COMPUTING SEMICONDUCTORS IMAGING AND DISPLAYS

PIV

continued from page 1

Administration (GSA) to systems integrator BearingPoint to provide PIV enrollment services and identity cards, is up in the air. Competitors Lockheed Martin, Xtec and Electronic Data Systems filed legal protests two weeks ago. When a contract is protested — a common occurrence in the world of government — the work usually stops. But not this time.

To meet the Oct. 27 deadline, the GSA — designated by the White House Office of Management & Budget (OMB) last year as the executive agent for government-wide acquisitions of HSPD-12-related IT — is plowing on.

The GSA says BearingPoint has been instructed to go ahead as planned and open PIV enrollment centers in Washington, D.C., New York, Atlanta and Seattle.

"The whole intent is to improve the security of the U.S.," says Michel Kareis, PIV program manager at the GSA. "The GSA is setting these centers up as a shared services solution so agencies don't have to set them up on their own."

Kareis says she expects about 400,000 government employees to get their PIV cards from these services by appearing in person with proof of identity, and have their photo and fingerprints taken.

The GSA, which hopes to see the government resolve the protests against BearingPoint by the end of the month, intends to add 100 service centers in the United States, probably at government-owned facilities that it runs.

Under the OMB guidelines, federal agencies have to acquire the PIV products and services from GSA-approved lists, and high-tech contractors have been lining up seeking approval.

That process requires vendors to have products tested in government labs to see if they meet technical requirements, says Scott Price, group senior vice president in General Dynamics' IT group. General Dynamics was approved in July as an HSPD-12 system provider.

Defining the PIV technology has been no small matter. Two years is scant time to establish government standards and conformance testing of products, including smart cards, readers, biometrics, middleware and public-key encryption.

But the National Institute of

A short history of Personal Identity Verification cards

The deadline is looming for agencies to meet a presidential mandate issued in 2004.

August 2004	President Bush issues Homeland Security Presidential Directive (HSPD-12) mandating federal agencies be prepared to issue a standards-based identity card for physical and logical access control by Oct. 27, 2006.
February 2005	The National Institute of Standards and Technology issues Federal Information Processing Standard 201 (FIPS 201) and later establishes the NIST Personal Identity Verification (PIV) program to test and validate PIV components and subsystems.
August 2005	The White House Office of Management & Budget issues implementation guidance for federal department and agencies, and in June designates the General Services Agency (GSA) as the executive agency for government-wide acquisitions of IT related to HSPD-12.
August 2006	The GSA sets up the HSPD-12 Managed Services Office as a source to acquire FIPS 201-compliant equipment, software and services in order to leverage the collective buying power of the government.

Standards and Technology (NIST) has issued the necessary standard, known as the Federal Information Processing Standard 201, and lined up about a dozen labs to test FIPS 201 conformance for vendor PIV products.

These third-party test facilities include Atlan Laboratories, BKP Security Labs, BT Cryptographic Module Testing Laboratory, Coact, Cybertrust's ICSA Labs and Info-Gard Laboratories.

But here, too, it is down to the wire, because the labs aren't yet officially accredited. "The labs are in a probation period," says Bill MacGregor, NIST PIV program manager, about the dozen facilities undergoing the accreditation process. MacGregor says he expects the process to be finalized by the end of the month.

In the meantime, NIST is publishing prevalidation product lists that include offerings from Oberthur Card Systems, Gemalto (formerly Gemplus), ActivIdentity, SETECS, ImageWare Systems, Sagem and RSA Security. "In the middleware testing, we basically define an API for commercial products for PIV cards," MacGregor says.

Ed MacBeth, senior vice president for marketing and business development at ActivIdentity, says the NIST test-validation process has involved a "self-certification process" that entails running products — such as ActivIdentity's ActivClient, which is smart-card middleware — through testing

process and procedures that NIST has published.

"It's like submitting a drug for approval by the FDA," MacBeth says. "You exhibit your results."

The NIST test regimen won't involve testing every line of code in PIV applications, because this isn't required under the FIPS 201. "FIPS 201 doesn't standardize on back-end interfaces," MacGregor points out.

The NIST PIV standard is based on the most recent ANSI card and biometrics standards. The FBI has been testing the fingerprint biometrics conformance in PIV products in FBI labs.

The whole PIV technical effort constitutes "a makeover of the marketplace," MacGregor says, adding that the government PIV push should bring interoperability to smart-card-based identity management. "Much of the biometrics products have been based on proprietary matching methods and storage methods," he points out.

The PIV cards, readers and middleware should allow for "government card portability," MacGregor says. The goal is that any PIV card that's good at one agency should be able to be used in any PIV application at another agency that's PIV-compliant to the extent that applications define themselves closely by middleware.

But will the gear be interoperable? To find out, NIST last May invited PIV product vendors to NIST headquarters in Gaithersburg,

Md., to discuss their products and demonstrate how well they worked together.

About four dozen companies supplying PIV cards, enrollment and identity management systems, issuance and printing, contact readers, contactless readers and physical-access control systems, PKI and biometrics showed up.

According to MacGregor, a month-long examination left him fairly optimistic. However, he noted it did prompt NIST to release a short "interoperability definition" of two pages defining further card-to-reader recommendations.

How PIV is to connect into any legacy systems is outside the scope of the FIPS 201 standard and will have to be addressed by agencies and their vendor partners, MacGregor says.

The Department of Defense, which over several years has issued millions of its own Common Access Cards (CAC) which are not FIPS 201-compliant, won't have to meet the Oct. 27 deadline the same way other agencies must. That's because the Defense Department, along with a handful of other agencies, including the Department of Veterans Affairs (VA), has received special exemption from the OMB, though it must submit a plan for migration.

But the Defense Department is expected to add FIPS 201 support to the CAC card in order to share necessary identity data with PIV applications. "Defense Department would be the first to admit they are not compliant with FIPS 201, but they're working toward it," says Tom Greco, vice president at Cybertrust, which is providing public-key infrastructure and certificate management as part of the BearingPoint team.

Handheld reader

Some vendors are building products to support the Defense Department and FIPS 201-based cards. CoreStreet, for example, last

week announced Pivman System, a handheld mobile device intended as a PIV and Defense Department card reader to be used by government personnel responding to emergencies.

"If there's a disaster or emergency, there will be a lot of people going to the scene to render help," says Phil Libin, CoreStreet's president. "The question is, who gets admittance?"

The Pivman handheld device can be used to check identity of personnel based on the holder's PIV card, with authentication provided directly through Pivman and with additional information stored in remote databases that can be accessed over a Wi-Fi or General Packet Radio Service network.

If needed, the Pivman mobile device can supply information obtained from back-end databases about the card holder based on role, such as firefighter or medical personnel. The Department of Homeland Security is said to be testing the Pivman System.

ActivIdentity, whose card-management software supports the CAC and the Government Smart Card Interoperability Standard, an

earlier government standard said to be used in a half-million smart cards at the VA, views PIV as an evolution.

"PIV establishes a rigorous process for identity verification," MacBeth says. PIV also will touch the private sector, such as Northrup Grumman, because government contractors will have to use it, he points out. But it's uncertain how quickly it would be adopted by companies in the private sector not falling under the HSPD-12 mandate.

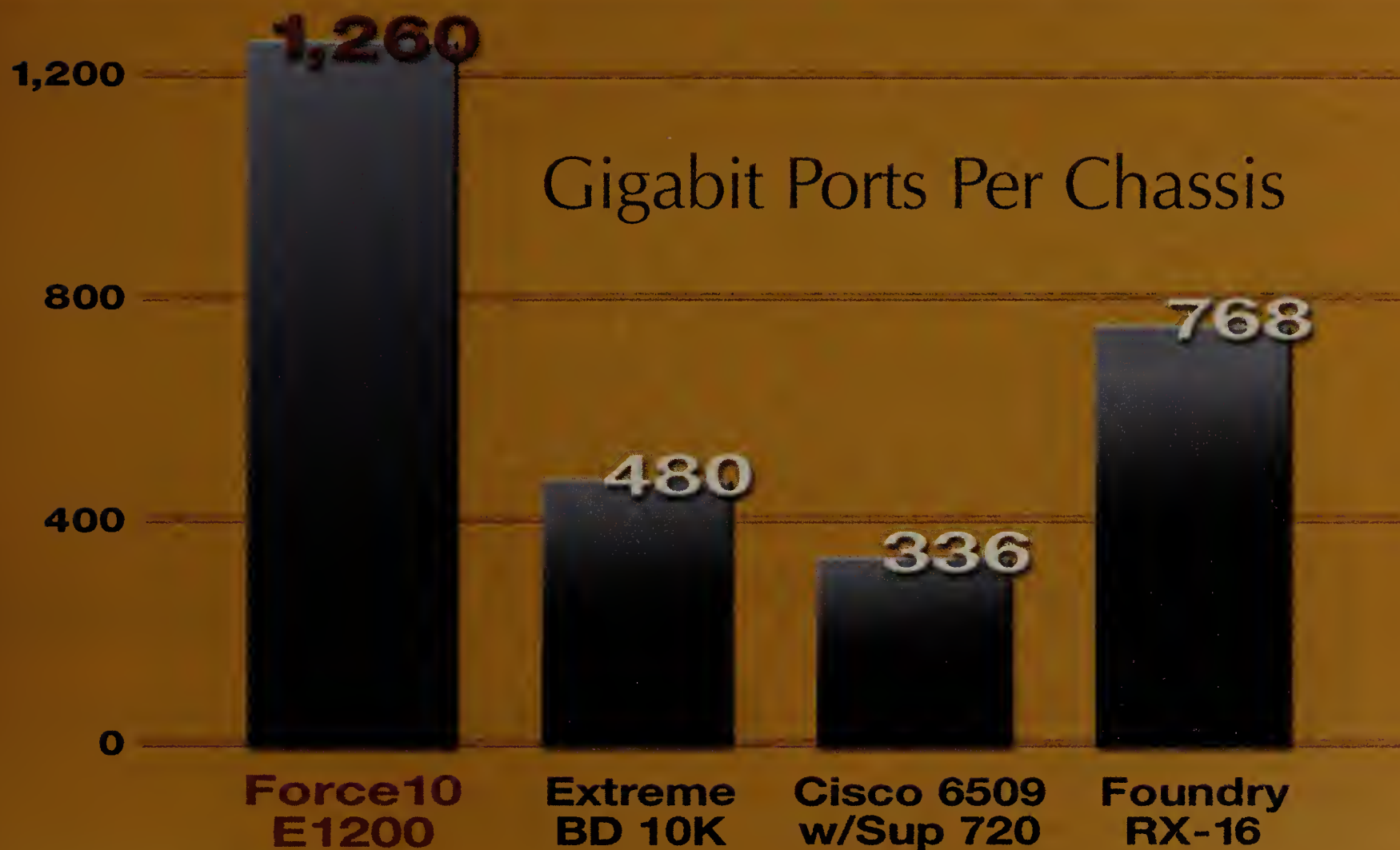
The transition from any older technologies used for physical or logical access is going to be a slow process, according to many.

"It can't all be done on Day One," MacGregor says. "There's a transition that has to occur, and it will take a long time to move from older magnetic-strip cards that some agencies use for physical access to PIV." ■



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FORCE 

Interop

continued from page 1

say, because network managers now are also responsible for application performance.

"Network management has been evolving away from managing the network on a component or device level, to managing it as a delivery system for application services," says Dennis Drogseth, a vice president with Enterprise Management Associates. "The network team is being called upon to troubleshoot and prevent application performance problems, because the network touches applications and applications can be scattered across a distributed network in pieces."

Vendors add app intelligence

Network General is debuting its Network Intelligence Suite, which couples its Visualizer 4.2 products with NetVigil 4.2 software from Fidelia (acquired in February). The company also is announcing a series of Business Forensics packages, which use Visualizer and NetVigil software, along with analysis and intelligence on specific technologies, such as VoIP. Network Physics also is using Interop to air its latest offerings, which it says are better now at managing VoIP, SAP and other applications (see story, page 29).

NetVigil 4.2 installs in a Linux environment with a SQL database on the back end; Visualizer 4.2 is a probe that installs at various points on the network. Network General says Fidelia's technology lets customers group elements and manage them across an infrastructure as a service, instead of having to tackle performance problems with distributed network protocol analysis tools.

Barney McCauley, principal IT specialist for the Sacramento Municipal Utility District in California, says the combination of Network General probe technology and NetVigil software lets his team monitor traffic between two data centers and optimize his network to best support both locations. He tested a beta version of the suite and liked what he saw.

"We were looking for a way to see the traffic in real time and historically so we could make sure we had not moved too much network traffic from one data center to the other," McCauley says. "We will now be able to track the network volumes with NetVigil and

using the Visualizer reporting, we can determine the application protocols that were the source of the traffic."

Pricing for NetVigil 4.2 starts at \$55,000. Visualizer 4.2 costs about \$45,000.

Newcomers widen scope

Also at Interop, GroundWork Open Source and Splunk will show off versions of their flagship products with dashboard, reporting and performance enhancements to provide IT managers in enterprises and small and midsize businesses (SMB) a more complete network-management alternative to products from BMC Software, CA, HP and IBM.

"Reporting is one of the features in management products that you can never have enough of. Customers need to get real-time, historical, trend, analysis and business-impact data in their reporting," says Cameron Haight, a research vice president at Gartner.

GroundWork, for instance, added customizable, executive dashboard capabilities to its

product and integrated Eclipse's BIRT (Business Intelligence and Reporting Tools) open source reporting engine into its GroundWork Monitor 5 software line. The software runs on a Linux server with memory in disk, and has real-time status views, historic trend reporting and an alerting system. The company provides three flavors of its monitoring software: a free-for-download open source version, an SMB version tailored for organizations with a maximum of 50 servers or networked devices to monitor, and a professional version priced at \$16,000 per year for larger enterprise deployments.

GroundWork customer Sam Lamonica, IT director at general contracting and engineering company Rudolph & Sletten in Foster City, Calif., previewed the software and says it looks promising. He points to such features as performance trending, which lets his team collect and analyze past data by "running a report," and syslog processing that "allows us to centralize syslog in a single loca-

tion for ease of management."

Yet more work could be done, he says. "While this version is a big improvement over the old one, we'd still like to see an easier-to-use GUI," he says. "There are just too many different tabs to work with in the program, and things are hard to find among all these tabs."

GroundWork also will unveil its Network Management Suite, the features of which — autodiscovery, network mapping and network protocol analysis — GroundWork Monitor Professional customers can take advantage. The add-on costs \$9,000, and all upgraded and new GroundWork products are scheduled to be available in mid-October.

For its part, Splunk increased the search capabilities in its flagship software, letting IT managers find data across servers at distributed locations. Splunk 2.1 software, which runs on Linux, Unix (including Solaris) and Mac OS X operating systems, searches for management data across logs, message queues,

configuration files, SNMP traps and database transactions to correlate events more quickly that could be related to a failure — and that network managers typically would have to search manually.

The company also added a Web-based administration interface to its management software. Splunk 2.1 pricing begins at \$2,500 per year.

Also at the show, newcomer Uplogix plans to showcase its Envoy Network Resource Manager 3.0 appliance, which manages devices and systems and doesn't depend on the network for connectivity. It collects data that provides insight into device health, and logs user interactions with devices to ensure compliance.

Envoy plugs into the console port of devices at remote offices. One appliance can manage four to 32 devices per location. The distributed appliances work with management software, prepackaged on a Dell server and installed in the main data center. ■

Switch, router vendors line up products

BY PHIL HOCHMUTH AND TIM GREENE

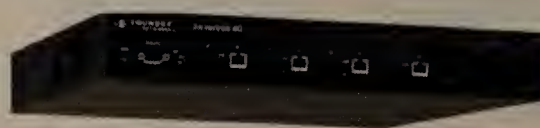
Foundry Networks and Citrix are two companies planning to use Interop to launch application acceleration tools.

Foundry plans to announce a server offload device; Citrix will launch boxes designed to speed up WAN links; and Adtran and StillSecure will introduce LAN switch and network access control (NAC)-based security gear.

Foundry's ServerIron 4G switch is designed to sit in front of Web and application servers and speed up client access by offloading some security and network functions. The device can take over SSL encryption duties from a Web server and provide server load balancing at Layers 4 and 7, Foundry says.

The device includes Web application firewall capabilities, which let it drop connections associated with suspicious behavior, such as incorrect data repeatedly entered into Web forms. It has four 100/1000Mbps copper or fiber ports, and starts at \$12,000.

Citrix is announcing two appliances in its WANScaler family, with improvements that speed up WAN performance by reducing the number of bits that have to cross the connection. The 8000-series WANScaler devices, unlike devices in the earlier 6000 series, have disk storage, which is used to store traffic. That makes it possible to scan larger data sets for repetitive blocks that can be replaced by tokens that are sent over the link instead of the



Foundry's ServerIron 4G includes four Gigabit Ethernet ports and SSL processing offload.

bits themselves. Citrix says the use of tokens can reduce traffic by as much as 3,500-to-1.

The high-end WANScaler 8800 for data centers supports 50,000 simultaneous connections and has an 850GB hard drive. It is priced from \$40,000 to \$94,000 depending on the size of the WAN link it supports, from 10M to 150Mbps. The WANScaler 8500 has a 160GB drive and costs \$8,500 to \$45,000 depending on the size of the links, from T-1 to T-3.

Citrix also is upgrading software for its NetScaler appliances, which front-end Web servers and speed up transactions. Outfitted with the new software, a single appliance can support as many as 15,000 servers and divide them into service groups. That means if a single service is supported by multiple servers, the appliance can represent the servers through a single IP address.

It also can rewrite HTTP headers on inbound and outbound traffic to mask details about internal network addressing from those accessing servers via the Web. Citrix has added server load balancing for Session Initiation Protocol servers, a feature NetScaler appliances lacked before.

Adtran is announcing two sets of managed switches for small offices.

The NetVanta 3448 is a multiservice access router that includes a router, eight-port 10/100Mbps switch, firewall and optional IPsec VPN support and Power over Ethernet (PoE). The box, which replaces the NetVanta 3200, supports two T-1 WAN links as well as 56Kbps and ADSL2+ asymmetric-DSL connections. It costs \$1,045. PoE support will be available for \$345 in the fourth quarter.

Enhanced VPN capabilities cost \$395 extra. The switch also supports QoS. The new NetVanta 3430 is the same platform without the switch; it costs \$895.

Adtran also will announce the 3100 family of NetVanta fixed-port routers. They include a firewall, IPsec VPN, support for 802.1X authentication and QoS. The 3120 is a four-port switch with a 10/100Mbps WAN port and an analog modem. It costs \$645. The 3130 router is the same, but has a DSL WAN port; it costs \$595. ■

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Interop plans

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Cisco, Microsoft effort only a first step

BY JOHN FONTANA

A long-awaited first pass at demonstrating interoperability between network access control components from Cisco and Microsoft only underscores the complexity of the task that remains and the need to involve more vendors, experts say.

The good news, they add, is that the cooperation building between these industry giants should benefit most of those organizations that have built their infrastructures around Microsoft and Cisco products.

"The interoperability is important based on who the players are, but it is hard to get excited about two vendors patching together their proprietary hardware and software," says Andrew Braunberg, senior analyst for information security at Current Analysis. "We are no closer to open standards for network access control."

Openness is being pushed by the Trusted Network Connect (TNC) group, which is working on a set of open NAC specifications within the Trusted Computing Group (TCG) industry association, and by the IETF's Network Endpoint Assessment (NEA) working group. Microsoft is a member of both groups and says it plans to focus more on those efforts after completing its initial work with Cisco. Cisco is not a member of TCG, but does work within the NEA.

At IDG's recent Security Standard conference, the companies put on a demonstration involving integrating Cisco's Network Admission Control (C-NAC) and Microsoft's Network Access Protection (NAP) frameworks. They also released a white paper and announced plans for a private beta



"It's always 'add all these things together and it will be interoperable,' which is really just them saying 'you must install two separate policy servers to do the job that one was able to handle previously.'"

Joel Snyder, senior partner, Opus One

later this year.

"They have some form of interoperability, but you still end up with a proprietary architecture that is tied down to their business interests," says Steve Hanna, co-chair of the TNC group, which in May released final specifications for building an open standards-based NAC system. Hanna says the goals are adoption, greater functionality and compatibility, and compliance testing.

Observers say interoperability gains by Cisco and Microsoft are only small steps forward, because they center on consolidation around agent protocols used to provide data on the health of network endpoints, not around the frameworks themselves.

The two vendors specifically pointed out that customers would have to deploy the Cisco Secure Access Control Server and the Microsoft Network Policy Server for the initial interoperability release.

"It's always 'add all these things together and it will be interoperable,' which is really

just them saying 'you must install two separate policy servers to do the job that one was able to handle previously,'" says Joel Snyder, a senior partner with consulting firm Opus One and a member of the Network World Lab Alliance. "It just complicates things at a time when they could have gotten simpler," he adds.

Snyder says one good outcome may be simplicity on the client side, with Microsoft taking responsibility for the client-side agent and APIs.

The two vendors say a single agent, which will ship with the Vista client operating system and Longhorn Server, will operate across the Cisco and Microsoft platforms and be used by third parties to tie their systems into the architecture. Cisco will continue to develop its Trust Agent to support non-Microsoft platforms, and Microsoft will make available APIs so third parties can develop cross-platform agents.

"We still think this admission control is in its early days," says Mark Ashida, gener-

al manager for enterprise networking at Microsoft. He says Microsoft plans to offer licensing on all the protocols in the NAP architecture. "We are working on a licensing program to recreate the NAP implementation."

Ashida bristles at the notion that Microsoft's NAP is a closed architecture, citing standard protocols that it takes advantage of such as RADIUS.

"I feel strongly that among the many things I have seen at Microsoft, this is about the most open," he says. "And through licensing we want to make it more open, but it is not open source."

Cisco officials concur that the Microsoft relationship is a work in progress, but say the fact they have licensed each other's protocols will provide flexibility in meeting customer demands.

"This means if customers come to Cisco and say, we want your RADIUS server to support these NAP features, then we can build that in," says Bob Gleichauf, vice president for the security technology group at Cisco. He says future development will head towards policy. "You are going to see a lot of companies innovating around policy controls, and over time you will see a richness of development in that area."

While that may be the future, observers say what customers have now from Cisco and Microsoft is white-paper-thin until Microsoft ships Vista and Longhorn.

"We are at a point where we have some interesting ideas on paper," says Rob Ayoub, analyst for network security with Frost & Sullivan. "We are still a long way from productizing all this."

He says those products will complicate the picture further, because NAC contains a lot of pieces that network administrators have never seen before. "If you are completely a Cisco and Microsoft shop, this might work OK, but if you have other pieces, that is where the real challenges will come in."

Separately and within their own architectures, however, Cisco, Microsoft and the TNC group are making progress in solidifying their NAC platforms.

This week, Interop Labs will hold the second of its two NAC tests on the three architectures at the fall Interop conference in New York. In May's first round of testing, all three platforms showed interoperability with third-party products designed specifically for their architectures.

For the next round, Cisco is coming in with a partner community of nearly 100 and nearly 1,000 customer deployments, and Microsoft is bringing solid partner support despite delays in Vista and Longhorn. TNC for its part has realized strong vendor uptake across its range of NAC specifications. ■

Q&A Industry giants talk about NAC

Cisco and Microsoft recently revealed how they are working toward interoperability between Cisco's Network Admission Control and Microsoft's Network Access Protection technologies. The companies used The Security Standard conference last week in Boston to detail how — when Microsoft's Vista sees widespread adoption and Longhorn server ships at the end of 2007 — customers will be able to use a jointly developed API to integrate Microsoft systems with, for instance, Cisco's Access Control Server.

At the conference, Network World Senior Editor Denise Dubie caught up with Bob Gleichauf, CTO of Cisco's Security Technology Group, and Mark Ashida, general manager of Windows Networking at Microsoft, to learn more about why the companies joined forces on secur-

ity and what's in store for future collaborations.

Explain a bit how Cisco and Microsoft technologies working together will ultimately help customers.

Gleichauf: These technologies have been designed to be much more transparent, because they are trying to just get a basic assessment to figure out what category you fit in: fully compliant, partially compliant, risk or dangerous, as an example; those are arbitrary definitions to which policy could be written. Then you can start assigning network access based on that and the remediation process based on that, if that is appropriate. Automating that process frees up administrative time for other tasks.

Did you find customers uncomfortable with the level of automation the interoperability between the products poses? If yes, how did you address it in the technology?

See NAC, page 27

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IT budgets, salaries going up in 2007

Most IT executives also expect level or rising headcounts, survey finds.

BY CAROLYN DUFFY MARSAN

IT budgets, staffing and salaries are expected to increase again in 2007, according to a survey of CIOs and other IT executives that are set to be released this week.

The survey will be discussed at the annual meeting of the Society for Information Management (SIM), an association of 3,000 CIOs, IT executives and academics. SIM's meeting, which will focus on using technology to drive business value, will be held in Dallas.

In its annual survey, SIM found that 85% of CIOs expected their IT budgets to rise or hold steady in 2007. Similarly, 80% said their 2006 IT budgets had increased or held steady compared with 2005 levels.

"It's continuing to look positive for IT in terms of career opportu-

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nities, salaries and investment," says Jerry Luftman, a professor and associate dean for graduate IS programs at Stevens Institute of Technology in Hoboken, N.J., who

conducted the survey.

Luftman says SIM members are accurate at predicting future budgets. "Last year, 20% of folks projected that their IT budgets would be cut this year, and that result was spot on," he says.

In terms of staff, 72% of CIOs predicted that their IT head count would stay the same or rise in 2007. This result is consistent with the 72% of CIOs who said their IT head count actually did stay the same or rise from 2005 to 2006.

Luftman pointed out that last year CIOs predicted a larger rise in IT head count for 2006, with 83% of respondents predicting that staffing levels would stay the same or rise.

"The trend is still going up, which is good, but it's not going up quite as much as IS executives were pushing for," Luftman explains.

In terms of salaries, 71% of CIOs predicted that their IT staff would see raises in 2007, while 20% said salary levels would stay the same as 2006.

This compares with 74% of CIOs reporting raises for their IT staff in 2006 and another 23% seeing salaries hold steady.

"This is a good story, with 97% of IS executives saying that their salaries are the same or better than a year ago," Luftman says. "Historically, they are pretty good at projecting salaries for the next year."

The survey finds that more CIOs report to the CEO of their companies, up to 45.2% this year from 42.6% last year. CIOs also are holding on to their positions longer, with the average tenure being 3.6 years, up from two years in the early 2000s.

"I'd like to see [tenure] over five years so that CIOs can have a stronger impact on the business," Luftman says.

Offshore outsourcing remains an issue but not a big one. CIOs said that 3.3% of their 2007 IT budgets would go to offshore outsourcing, compared with 2.7% in 2006. On average, CIOs said that 4% of their IT budgets were allocated to offshore outsourcing in 2006.

Web services topped the list of the CIOs' top technology developments. A newcomer to the list, Web services bested business intelligence and security technologies, which came in at Nos. 2 and 3.

This year's SIM survey attracted 139 written responses from CIOs and IT executives who belong to the group. ■

SecureWave touts unified GUI in Sanctuary upgrade

BY JOHN COX

SecureWave this week is scheduled to release a new version of its Sanctuary software suite, which is designed to control user access to laptop applications and storage devices.

In the 4.0 release, both of the Sanctuary programs, Application Control and Device Control, can be managed from a common GUI. In the past, they had to be managed separately.

Now network administrators have a single console that let's them integrate data from both. With the integrated console, and some new and expanded reports, administrators can relate a user's activities with a specific application to specific CD-ROM, USB drive or other portable memory devices.

Changes include simpler administration

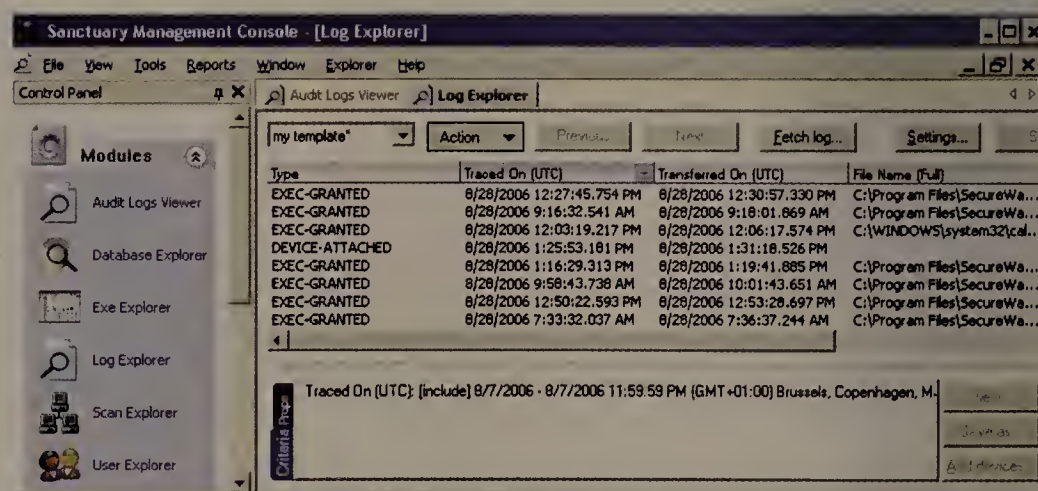
of centralized encryption policies, more efficient data exchanges between the Sanctuary client and server programs, and the ability to audit any changes made to a client by someone with administration privileges.

Both Sanctuary applications essentially create whitelists of authorized applications and devices on an enterprise PC. If they aren't on the list, the client code will block the user's access to them. The software can also keep a record of a user's activities.

SecureWave competes with several companies that also offer software to extend enterprise control over PCs and their peripherals, especially laptops that may be used outside a company office. So-called endpoint-security vendors include Safend and SmartLine, and Credant Technologies.

Customers typically buy either Sanctuary Device Control or Application Control to start with. The second program can be added by paying the additional license and activating a license key. No additional software installation is needed.

The console GUI has been redesigned to make it easier to navigate the various screens. Reporting has been improved so that administrators can see how a specific storage device associates with different applications, according to Dennis Szerszen, vice president of marketing for the Durham, N.C., outfit. Finally, the Sanctuary program used to view and work with file types has been redesigned



SecureWave's new Sanctuary 4.0 offers this unified management console, so administrators can customize views of what's happening on enterprise laptops and PCs, with both application files and peripheral devices.

to mimic Windows Explorer.

SecureWave plans to add features that expose more details about what users do with data, and eventually allow administrators more detailed control over data access, according to Szerszen.

Enforcing encryption policies is simpler in the new release. In the past, a USB or other device first had to be plugged into a specific PC; only then could that PC's SecureWave client enforce a rule that data saved to that drive had to be encrypted. Version 4.0 eliminates that step: When a user plugs in certain brands of devices, such as a Lexar USB drive, it can use

unique identifier information on the drive to know that it can be encrypted and enforce whatever encryption policy has been decided upon.

Sanctuary 4.0 now also automatically compresses both log entries, which are used for keeping track of activities, and the initial download of the Sanctuary whitelists to the clients. Changes to Sanctuary policies can now be replicated to client devices without having to download the entire policy file. Both of these enhancements are designed to minimize bandwidth demand, according to Szerszen.

Sanctuary 4.0 costs \$65 per user. ■

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SonicWall targets image-based spam

BY CARA GARRETSON

SonicWall last week announced a new version of the e-mail security-gateway software and appliance it acquired upon purchasing MailFrontier earlier this year.

SonicWall E-mail Security 5.0 includes new ways to trap spam and enhanced compliance features for the content of outbound messages.

Among the new spam-

detection features is an image-thumbprinting technology that helps catch image-based spam — e-mail with text messages hidden inside an image that evade traditional spam filters. SonicWall collects feedback from its network of users regarding which of these e-mails with images are spam, and then blocks them accordingly, officials say.

In addition to reporting on image e-mails that are spam, users can report on those that aren't, therefore reducing the potential for false positives, the company says. The new feature is designed to help large and small organizations get a handle on threats entering their organizations via e-mail. Company officials quote an IDC report that says IT managers now rank spam as the third-greatest threat to

their organizations.

On the outbound e-mail end, Version 5.0 includes compliance features that help organizations enforce regulations such as the Sarbanes-Oxley Act, the Gramm-Leach-Bliley Act and the Health Insurance Portability and Accountability Act by flagging e-mails that may contain sensitive data protected by these laws. The product uses record ID matching to detect predefined values such as Social Security and credit card numbers, includes predefined dictionaries to match keywords, and includes predefined policies regarding content filtering, officials say.

Version 5.0 also makes it possible to encrypt outbound e-mails using Transport Layer Security or route an e-mail to a third-party

encryption provider. An e-mail archiving option, compliance reporting and e-mail auditing also have been added, the company says.

The SonicWall E-mail Security suite is available as a gateway appliance or gateway software, in versions for small and mid-size businesses and for enterprises.

Pricing for the software starts at \$195, and for the appliance, at \$1,395; both require buyers to sign up for an annual subscription to updates. SonicWall competes with e-mail security vendors including Proofpoint, IronPort, CipherTrust, Symantec and Barracuda. In addition to its e-mail security products, the company sells firewall/VPN appliances and content-filtering appliances. ■

EqualLogic rolls out tiered storage

BY DENI CONNOR

EqualLogic last week expanded its product line with iSCSI storage arrays that support tiered storage.

The PS3000 Series Storage Arrays use Serial Attached SCSI (SAS) drives of different speeds and capacities. The PS3800XV uses 15,000-rpm 150GB SAS drives (2.8TB) for the highest performing tier; the PS3600X uses 10,000-rpm 300GB SAS drives (4.8TB) for secondary storage. Combined with 7,200-rpm Serial Advanced Technology Attachment drives, the arrays will now allow for three tiers of storage.

The disks in the PS3000 Series



The PS3000 array allows tiered storage on Serial Attached SCSI disks and Serial ATA.

Storage Arrays are fully redundant and hot swappable. Each module has dual controllers and 16 disk drive bays, plus fans and power supplies. They connect to the network with three 1GB Ethernet connections. A management system on the enclosure monitors component status, disk drive health and temperature.

Management software included with the storage array enables configuration and installation, storage-area network virtualization, provisioning and RAID 5, 10 or 50 placement. A phone-home feature is available for automated troubleshooting.

Customers can opt to enable multiway replication for disaster recovery, snapshots for data protection and multipathing I/O support for redundancy.

EqualLogic competes in the iSCSI market with companies such as Nexsan and LeftHand Networks, and with more established array vendors such as EMC and Network Appliance.

The arrays start at \$65,000 and are expected to be available in October. ■

Collaboration tool gains VoIP hooks

BY JOHN FONTANA

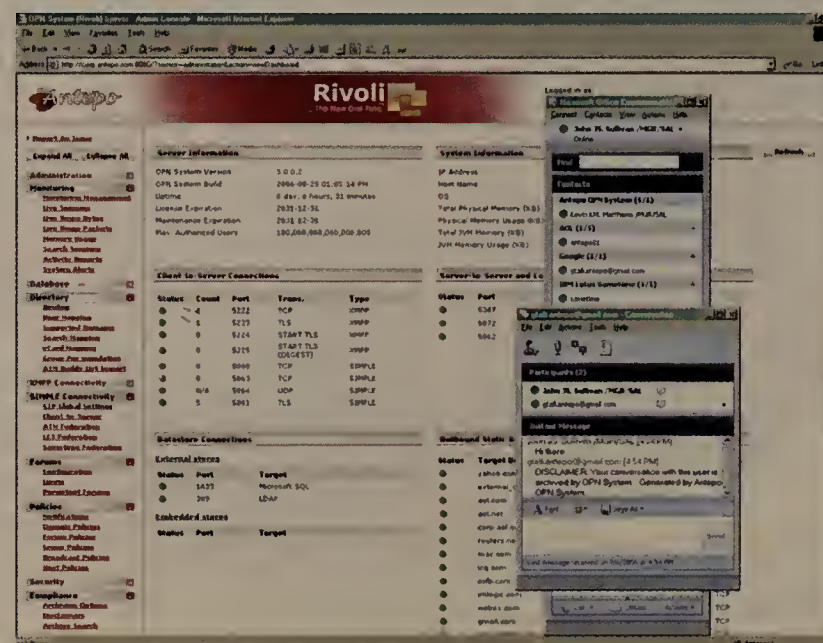
Real-time collaboration vendor Antepo plans to extend its protocol support in its instant messaging and presence server to open up its back end to more client choices and VoIP options.

With the release of the Rivoli server, the company also is introducing a name change for the platform that was previously called OPN System XT.

The company announced its changes last week at the VON conference in Boston.

Rivoli features native support for the Session Initiation Protocol (SIP) and Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions (SIMPLE). The company is extending that support to include VoIP and presence integration with VoIP.

It also is adding support for Microsoft Office Communicator and Windows Messenger IM clients, and presence integration with SharePoint Server, which Microsoft is expected to ship later this year to corporate customers. Users will be able to see if the author of a file in SharePoint is online and start an IM session with that user. The presence capabilities will extend to Office appli-



Antepo's Rivoli real-time collaboration server features a management console that can be used to track connections and system performance.

cations Outlook, Excel and Word.

In addition, the company is supporting white boarding, application sharing and VoIP via the SIP protocol, which supports connections to IP PBX servers.

Antepo is adding support for SIP-based soft phones, including certification of support for Counterpath's eyeBeam soft phone.

Antepo's changes are drawing interest from user and existing customers, who say the greater

range in client choices will help them extend their systems.

"The external connectors would allow us to add our customers into our instant messaging," says Alfonso Linares, product systems manager for eRx Networks in Fort Worth, Texas. Linares says the company, which provides third-party claims management and analysis services to the retail pharmacy industry, does not want to dictate software choices for its

customers. "Those users won't have to have the OPN client. They could have GoogleTalk, Yahoo or any client they want."

Linares says he scrapped a roll-out of Microsoft's Live Communications Server because it lacked a feature for adding groups of users into an IM session.

He is hoping to use that feature to let users to join a group from a Web site regardless of the client software they are using.

"We are looking down that road and starting our own development around SIP and looking how that might work for us," says Linares, who plans to roll out Rivoli after it is released.

Antepo is one of many vendors with SIP support including Microsoft, IBM/Lotus and Wired-Red. Major IP PBX vendors have included SIP support within their products, but Antepo continues in Rivoli its support for Extensible Messaging and Presence Protocol, which is supported by Jabber and clients such as GoogleTalk.

Rivoli ties into Microsoft's Active Directory and runs on Windows. It has versions for Linux, Sun, Solaris and Unix.

The cost for the software is \$18 per user. ■

Goat cheese as a metaphor for customer care

Clegg Ivey, a vice president with VoIP company Voxeo, recently told me a story about a restaurant near the company's Orlando headquarters that was losing track of what made it successful.

The restaurant's food wasn't something you would go out of your way for, except for a goat cheese appetizer that Ivey said "was to die for." The restaurant became a favorite of the Voxeo staff almost entirely because of the appetizer. But the staff recently learned that the menu had changed and the goat cheese appetizer was no longer on it.

The restaurant had hired a new chef who wanted the menu to reflect his vision, not



NET INSIDER
Scott Bradner

the past chef's. Ivey told the story to point out that it is easy for companies to ignore what products or features attracted the customers they already have. Ignoring this risks alienating those customers such that they may quickly become ex-customers, just as most of the Voxeo staff has. Ivey offers "don't take goat cheese off the menu" as a

phrase that can be used to remind companies not to forget what the customers liked about the company.

The reverse is true as well — don't forget to replace what the customers hate. Preserving bad products because you know how to make them is at least as much

of a risk as tossing out the good ones.

The goat cheese admonition must not get in the way of new products or product evolution — maybe the new chef at Ivey's restaurant has some very good recipes that will eclipse the goat cheese appetizer.

But it will be harder to get the folks from Voxeo to try the new menu because the lack of the specific dish they came for means they are not going to the restaurant. Maybe for that restaurant it would have been better to phase in the new, eliminating the good dishes from the old menu over time.

Obviously, the dilemma of how to evolve products is not limited to the restaurant business. Apple made significant changes to the user experience when it moved to OSX from OS9. Not everyone was happy with the changes — I have friends who have never made the switch because they did not like the new look and feel. But overall, many more people like the OSX environment than were upset about the change.

Some early reports about Microsoft's

Longhorn (now Vista) complained a great deal about the changed user experience, predicting significant increases in user support costs. I have not seen a lot of these reports of late, but I do expect many corporate Windows users will soon be wistful over today's Windows (but not as many as Microsoft wants because the incentives to change to Vista will not overcome the desire for the familiar in many users).

The balance between consistency and change is not easy to get right, as many companies have found out the hard way. Just because you think something new is better may just not be enough to overcome the customers' desire for the goat cheese appetizers of old.

Disclaimers: Goat cheese appetizers are not quite what Harvard students expect to get in the dining halls (though maybe the business school is different). So this is my own hankering, not the university's.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

Declude adds new antispam product

BY CARA GARRETSON

Declude, which for years has been selling its e-mail security technology for use in mail servers, last week announced a version of its antispam and antivirus product for gateways.

Previous to its rollout of the new Interceptor product, Declude's offerings have been available only for Ipswitch's IMail and SmarterTools' SmarterMail e-mail servers.

The core technology behind Declude's e-mail security products is called Security Flaw Scanning, which is designed to catch structurally flawed messages in which viruses can easily hide and pass through virus scanners undetected, says Dave Barker, director of product marketing.

At the Boston Celtics, where vice president of technology Jay Wessel manages 100 e-mail boxes running on an IMail server, Declude's antispam and antivirus technology has been in use for about five years. According to Wessel, his organization has been spared a number of e-mail threats attempting to exploit Outlook vulnerabilities by Declude's e-mail security technology, which he uses in conjunction with other antivirus products.

"We use Declude out at the periphery, and the bulk of the [protection] is done by Declude. I've absolutely seen some of those Outlook vulnerability exploits, and they get blocked," he says. "I would hope that at the user level the other [antivirus] tools would be doing their jobs, but I don't like taking chances."

In addition to this zero-hour virus protection, Interceptor features spam protection powered by Commtouch's integrated RPD

Profile: Declude

Headquarters:	Newburyport, Mass.
Founded:	2001
Product portfolio:	Interceptor gateway e-mail security software; Security Suite e-mail server software; MailProtector e-mail security hosted service.
CEO:	Rich Person, previously head of software company Poindexter Systems.
Employees:	17
Financials:	Privately held

engine, integrated AVG virus scanning from Grisoft, whitelist and blacklist monitoring, predefined reports offering threat statistics, and automatic updates for administrators.

While entering the already crowded e-mail security market could be viewed as risky, Declude CEO Rich Person says the company's unique Security Flaw Scanning technology and pricing strategy set it apart. Interceptor costs from \$375 per year for organizations with 10 to 15 employees to a maximum price of \$12,500 per year, with discounts taking effect in subsequent years. Those prices include all modules.

In addition, Declude has 3,000 customers using its e-mail security product for mail servers, Person says, so it's not as if the company is starting from square one.

Declude competes with companies such as Symantec, Barracuda, IronPort and Mirapoint. ■

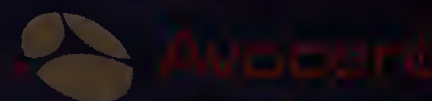
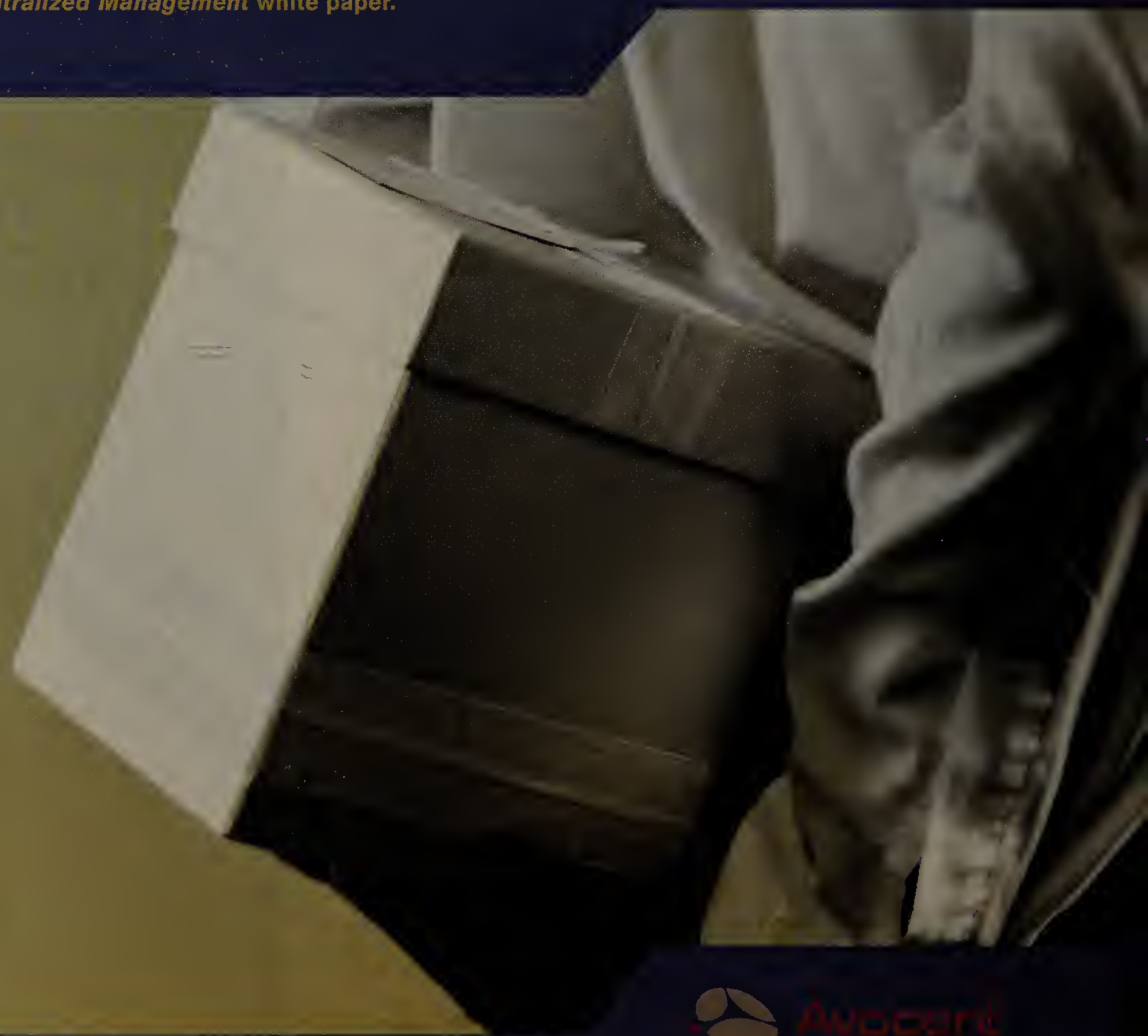
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Real-world testing — a real-world perspective

"But experts cautioned that the test lacked some real-world conditions..."

Testing being at the core of what we do at The Tolly Group, a newspaper story with these words was certain to attract my attention. It might seem to some that any test is an incomplete test, and by extension, without value — but I don't agree.

Interestingly, the quote above is not from a trade publication but from a recent front-page story in *The Washington Post* titled "Target Intercepted in Anti-Missile Test." In this case, experts bemoaned that the test attack was not a surprise attack, did not involve multiple incoming missiles and did not involve an enemy trying to thwart the tracking system. The implication was that the Pentagon test was a pointless waste of time (and to be sure, it cost a lot of money).



TOLLY ON TECHNOLOGY

Kevin Tolly

So, who is right? From reading about all of the flaws in the test, one might concur with the experts. Again, I would disagree.

When you think about it, a test that tries to do too much often accomplishes nothing. Imagine if the missile test had all of the extra real-world conditions listed above and it failed. The first thing one

would want to know is why. With so many variables the likely answer would be: Who knows — we tried to do too much.

The essence of testing, whether in IT or elsewhere, is to isolate certain elements to establish a baseline of performance or functionality. Subsequent tests can build upon the base knowledge and be used to exercise more sophisticated features.

We need to build our testing — as the Pentagon did — by testing core functions and then increasing complexity. It doesn't

make sense to conduct, say, a test trying to establish the maximum throughput of a wireless LAN (WLAN) solution in an environment that you know is loaded with interference and physical obstructions. What would be the point?

Just as we let athletes optimize their performance by wearing performance clothing at track and swim meets, it makes sense to determine the best case performance of a technology before adding other elements. As important as other real-world elements are, they are often meaningless without some baseline numbers for comparison.

In the case of WLANs, for example, it didn't take us long to realize that the best throughput — even under optimal conditions — was about half of the rated speed (we learned to expect no more than about 20M to 22Mbps out of 802.11g 54Mbps LANs).

If we hadn't established this in ideal, laboratory conditions, one might have thought interference was driving down throughput dramatically. (As it is, there are

architectural reasons for this number.)

So, yes, let's do WLAN tests in environments with obstructions and interference but remember the essential of having controlled results with which to understand this.

Let's recognize that a test piling on complexity is not inherently better than a straightforward test of a single aspect of a product done under controlled conditions.

A test must be repeatable to carry much meaning. Given the nature of some technologies — wireless again provides a good example — reproducing a test environment isn't always possible. Still, similar results should be expected for similar conditions.

Finally, and most importantly, we need to remember that numbers without analysis often tell us nothing. Look beyond the numbers; look for meaning.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

E-mail security system moves to VMware nets

BY CARA GARRETSON

Proofpoint last week announced a version of its e-mail security product for VMware virtual machine environments.

Slated for commercial release in the fourth quarter, Proofpoint's Messaging Security Gateway for VMware will be available as a download from Proofpoint's Web site, says Andres Kohn, vice president of product management. Customers will receive the same spam and virus protection and content control as users of Proofpoint's appliances and software modules, he says, while benefiting from the advantages of a virtual environment.

Those benefits include cost reduction. Running Proofpoint's e-mail security product on a partition of an existing server as opposed to buying a new appliance represents upfront savings plus those realized from taking advantage of an existing resource, Kohn says. Customers would also save money by not having to rack, cool and power an additional device.

A virtual appliance also can be up and running in the time it takes to download the program, vs. having to install and configure a dedicated appliance, Kohn adds. Backup and recovery are simplified by using VMware's infrastructure management tools to take and restore snapshots of an entire environment.

"I think the notion of virtualization makes a lot of sense and offers more reliability and redundancy than a traditional appli-

ance," says Richard Cummins, director of the technology services group at Community Medical Centers in Fresno, Calif., which uses Proofpoint appliances. "We just did a study and determined that it costs us \$5,000 per server per year to maintain a server in the data center. That number alone is compelling enough to pursue virtualization for some applications."

The virtualization was initially driven by the idea of getting more use out of underutilized servers. The next logical progression is to eliminate some of the dedicated appliances strewn across enterprises, says one analyst.

"It makes sense to take what used to be a separate, dedicated, physical appliance and make it a separate, dedicated, virtual appliance," says Neil MacDonald, vice president and distinguished analyst at Gartner.

Kohn says the creation of the virtual appliance was easy because the company originally based its product on standard hardware and software, namely Linux and Solaris. In addition, the company's pricing model — which is based on number of users, not per appliance — translates easily to the virtual world.

For an organization with 250 users, a one-year license of Proofpoint Messaging Security Gateway for VMware with anti-spam, antivirus and content-compliance modules will cost around \$10,000.

The virtualized appliance is available in beta version now at Proofpoint's Web site. ■

WE MADE IT WALLET-FRIENDLY





EYE ON THE CARRIER
Johna Till Johnson

Filling the 'Net measurement void

In my years as an engineer and physicist, I maintained a focus on measurement — one of my earliest research designs in high-energy physics was a liquid-argon calorimeter, which measures the energy created by a particle-physics experiment.

That's why I'm appalled at the state of Internet measurement now. Even though companies are becoming utterly reliant on the 'Net, we've never known less about Internet structure and performance — and that's a huge problem.

The best data we have is compiled by the good folks at the Cooperative Association for Internet Data Analysis (CAIDA), a not-for-profit research group run by the University of California at San Diego and funded by govern-

ment research grants with a handful of high-tech companies (see www.caida.org/home/).

Yet CAIDA's principal investigator and director, K. Claffy, routinely laments the lack of high-quality data her team can access and analyze. We don't even have an up-to-date map of the Internet, let alone a meaningful measurement of its traffic flows. The best available public data is at CAIDA, but it's woefully incomplete.

The problem is twofold: First, scientific researchers, while eager to access others' data sets, are reluctant to release their own. And second, the players with the greatest insight into Internet structure and performance — the carriers — are reluctant to reveal their inner workings to each other.

As a result, we lack a comprehensive view of the most sophisticated piece of infrastructure ever created. That's pretty disturbing, given how integral the Internet is to our global economy. Without a complete map of it — let alone a detailed understanding of its day-to-day performance — we can't ensure that it will continue to work reliably. If that doesn't scare you, it should.

What should be done? First, enterprises, vendors and service providers should start actively supporting cooperative Internet measurement projects, financially and by providing insight into their challenges. These organizations will benefit individually as well as help ensure the long-term stability of the 'Net.

Second, scientific researchers

and the entities that support them (universities, government and industrial research labs) should insist on sharing data sets publicly. CAIDA operates one repository for shared data sets, called DatCat, which is a catalog of Internet measurement data, but there are others. Researchers should be required to make their data sets available through at least one of the public catalogs.

Above all, we should start getting serious about measuring the Internet. The future quite literally may depend on it.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

AT&T acquires USinternetworking

BY DENISE PAPPALARDO

AT&T announced last week that it is acquiring USinternetworking for about \$300 million in cash.

USinternetworking is a privately held application service provider founded in 1998, when the ASP model was first popularized. The company touted big customer wins, but the ASP concept never lived up to its initial hype.

USi has 150 business customers, including companies such as GMAC, Michelin, Sunoco and Yankee Candle. The company's revenue totals about \$100 million; it employs 700 people and has two data centers.

What prompted AT&T to make the deal?

"We have a great capability from a collocation standpoint with great managed services right up to the operating-system level," says Mike Antieri, senior vice president of business marketing at AT&T. "We had a void, and we didn't have a significant level of expertise to manage at the application level."

Application management is USi's core competency, and the company is customer-service oriented, he adds.

"We have had a ton of customers ask us to manage at the application layer. We went after that through partners, because we didn't have the key requisite skills in-house or at scale," Antieri says.

AT&T says it will retain all of USi's employees and has offered retention packages to all key executives in an effort to keep them on board. The carrier says it will operate USi as a wholly owned subsidiary that will be run by the company's current chairman and CEO Andrew Stern. He will be CEO of the subsidiary after the acquisition.

This isn't AT&T's first foray into the ASP business. Back in 2000 AT&T introduced a hosting platform called EcoSystem for ASPs. That service is no longer available. But the service provider has not directly offered hosted application services or software as a service to customers, choosing instead to team with partners.

The deal is expected to close in the fourth quarter. AT&T sales representatives and sales channels are expected to start selling USi application-hosting services as soon as the deal closes. ■

New specification targets mobile phone security

BY JOHN BLAU, IDG NEWS SERVICE

Efforts to establish security standards for mobile devices were boosted last week with the release of the Mobile Trusted Module specification.

The specification offers a set of standards for mobile-phone manufacturers and software developers to store data securely in mobile devices, such as smart phones and wireless PDAs.

The standards, which were issued by the Trusted Computing Group industry association, have been years in development. They are backed by numerous companies, such as Nokia, Samsung Electronics and France Télécom, all of which are members of the Trusted Computing Group's Mobile Phone Work Group.

Like the Trusted Platform Module used in PCs, the MTM stores information in a secure area of the mobile device to ensure that the operating system, applications and data haven't been virtually or physically tampered with. It uses a system of "engines" within the device that report the state of their code so that their trustworthiness can be established.

Vendors can determine whether the MTM should be a discrete silicon chip or a system-on-chip implementation.

In addition to helping manufacturers and operators reduce the risk of virus attack and identity theft, the MTM can enable mobile payment and ticketing services. ■

IBM debuts encrypted tape drive

BY DENI CONNOR

IBM last week debuted a new tape drive that encrypts data in the drive itself. It's designed for markets that are increasingly regulated and concerned with data loss.

The TS1120 tape drive lets healthcare and financial services customers encrypt data at rest on tape from mainframe, Linux, Windows or Unix systems, thus eliminating the need for host-based encryption systems or separate appliances.

The TS1120 drive can be installed in IBM and Sun/StorageTek tape libraries. It has a capacity of 1.5TB.

The TS1120 also supports key management, critical to organizing tapes for retrieval. The IBM Encryption Key Manager for Java uses standard repositories and encrypts data by application, system or tape library. The tape drive uses 3592 cartridges, which are available in read-write or write once, read many times (WORM) configura-

tions for compliance.

Encryption support is available for z/OS, z/VM, i5/OS, AIX, HP, Sun, Linux and Windows platforms. The encryption capability is integrated with Tivoli Storage Manager.

The TS1120 competes with appliances from Neoscale, Decru and Vormetric and storage libraries, such as those from Sun/StorageTek T10000.

The TS1120 tape drive with encryption capability starts at \$35,000. ■

NAC

continued from page 18

Gleichauf: You will always have a certain part of the user community that fears being overmanaged, being over-monitored, but in the enterprise, which is the initial target for this type of technology, it's a different value proposition between the corporation and the employee.

Ashida: [This is] one of the things Bob and I both discussed in very early days. We often came across the issue of, should we do it this way or that way. We often said, this should be an IT admin decision so let's make it configurable. Because every company has a different architecture, a different infrastructure, so we made that configurability a key element in the technology.

Gleichauf: That is one of the hardest things we did.

"NAP/C-NAC raises the overall health of the average computer in the company."

Mark Ashida, general manager of Windows Networking at Microsoft

How would you classify C-NAC/NAP as an approach to enterprise security? Is it reactive or proactive?

Gleichauf: It is more like preventive medicine. You are making sure you are healthy by going to the doctor periodically, and hopefully you'll have lower medical bills in the long term.

Ashida: This may be an obscure reference. I am not sure if you ever heard of the health-of-the-herd idea, which is like when a lot of people say I am not going to get a flu shot and I won't get sick. But that is partially because everyone around them had flu shots so they did not get sick because everyone around them was healthy. But if everyone stopped getting flu shots, there might be a lot more flu. One of the key things about NAP/C-NAC is that it raises the overall health of the average computer in the company.

Gleichauf: And of the infrastructure.

Ashida: And that is really important, because as the overall health of the individual pieces goes up, so does the company's overall health.

How does the technology deal with a reluctant end user, one that maybe procrastinates updating agents or keeping systems up-to-date with software upgrades?

Gleichauf: What will happen in a corporation, at least one like Cisco where we have a very rich tradition of engineering entitlement and independence, they will get on the network. They just may not have as good a user experience as if they

were fully compliant. These systems are being designed so security IT staff can reward people for compliance, and only the people that are out of compliance pay some kind of tax.

Policy-based management can be a challenge for enterprise IT staff. How does the jointly developed technology work toward enforcing policies across systems down to the network elements?

Ashida: We view Active Directory as the place where you can store your policies. We view [Network Policy Server] as a place where you can transactionally evaluate those policies. And we view ACS as a way to have a common interface into the network for any kind of enforcement as we go forward. That is how we see the technology from a policy cascading down through the infrastructure.

Gleichauf: We have customers running ACS to Active Directory now, where the policy is in Active Directory. When Vista/Longhorn comes in, inserting NPS in the middle to act as that policy arbitrator is transparent. It will fit in because of the way it's being done with the architecture.

How does this partnership affect others that Cisco has with software providers? For instance Cisco and Microsoft initially announced their partnership in 2004, around the same time Cisco and IBM said they would team on network access through Cisco products and Tivoli software. Can we expect to see Cisco engage in more joint development efforts with software vendors?

Gleichauf: We could discuss this more offline, but the relationship with IBM is a good relationship for both companies and we are maintaining it. And until IBM has consummated the [Internet Security Systems] acquisition, the relationship will be maintained. Until they close the acquisition and they are allowed to talk to us in greater detail about how they are incorporating ISS, we can't really know how it impacts the relationship and it's pointless to speculate.

Cisco's recent push toward network management is spreading to security policy enforcement. Why is Cisco suddenly very much interested in managing its own gear, whether it to achieve greater efficiencies or security?

Gleichauf: Any vendor who is successful has a lot of control over its fundamental control plane. Our control plane is the network fabric. Google's is search engines. Microsoft's is the server, desktop and the operating system environment. When you have a significant presence in one of those areas, it is only logical over time that you will then decide in an opportunistic fashion what businesses you want to get into to enhance that fundamental control plane. It's logical for Cisco. It may not be the core competency

or the first thing customers will think when they see the Cisco brand, but it is something that will be an important enabler. Network management and policy is something that we will actively develop where it makes sense.

And it seems Cisco today is more open to sharing at least its management development efforts with specific partners?

Gleichauf: Microsoft and Cisco have been very open with one another that we will both be providing policy management components. That is why to the point of cross-licensing our development efforts, we were smart enough to cross-license without knowing where our respective business units may decide to go with the technology in the future.

Microsoft has its Dynamic Systems Initiative, and recently announced it would work with other management vendors on developing and fostering support for the Service Modeling Language. Why are management vendors today more apt to work together on standards to ease management and security for customers than they were five years ago?

Ashida: A key part is that enterprises,

which have been stovepiped in functional groups, now want or need to manage end-to-end.

End-to-end will more quickly tell them why e-mail is not working, because it is no longer satisfactory to have to call eight people to figure out what the problem is. They want to see in one place how systems and infrastructure are working.

This is going to be an opportunity for vendors such as Microsoft and Cisco to work together, because those are two elements that enterprises need to correlate.

Gleichauf: Convergence is king in driving down costs and improving the reliability and the quality of decisions you make. ■

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Network Physics hones application mgmt. focus

BY DENISE DUBIE

Network Physics says network engineers are experts on ports, packets and protocols. Where they could use some help is in quickly identifying the impact of specific applications on network performance.

The company this week at Interop plans to show how it has incorporated application-analysis capabilities across its updated management software and distributed appliance suite. NetSensory 6.0, a version of the appliances' operating-system software scheduled to ship in January, supports application classification, meaning it can quickly identify the type of appli-

ance problems, without as much manual intervention to perform "deep-dive packet inspection" with a handheld protocol analyzer, for example.

Network Physics' offering includes a central management and administration appliance called the NP-Director that works with distributed appliances that send intelligent summary data to the console.

The distributed appliances respond to problems without direction from NP-Director, but an administrator using NP-Director can tap into endpoint appliances to get a global view of a network. Typically, the appliances are installed on



Network Physics this week is expected to release new operating system software for its appliance suite.

cation (such as VoIP or SAP) by watching and monitoring traffic.

Industry watchers say such application-centric upgrades are necessary for any network management vendor going forward. Yet companies also need to be able to provide insight into the data they collect across network, system and application components, says Dennis Drogseth, a vice president with Enterprise Management Associates.

"The company has a history of gathering huge amounts of rich data, but customers have complained that dealing with all that information can be a challenge for anyone other than a senior engineer," Drogseth says. "With this release, they have gone a long way to improving the usability of the data they collect and providing more granular means to diagnosing problems by applications."

Network Physics says the added application-discovery and monitoring features let network engineers at all levels more quickly determine the source of perform-

a span or mirror port, or via a tap, to core switches in a network.

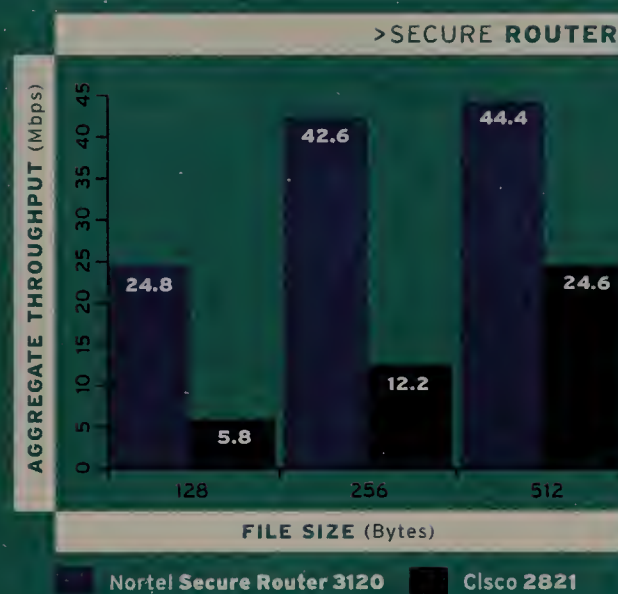
The application-specific technology, which can capture the various states of an application as it completes transactions and processes, would have Network Physics competing with network management vendors such as Network General, and could make NetSensory a complementary tool to software from the likes of Compuware and Mercury Interactive (recently acquired by HP).

Network Physics says it will preview a software add-on to NetSensory at Interop. Dubbed Business Reporter, it provides customers with a way to generate reports for IT management, line-of-business managers and other higher-level executives. Expected to be available in the first quarter of 2007, Business Reporter will be offered as a licensed upgrade to NP-Director.

Network Physics also will show NetSensory 5.3, due to ship by the end of this month. It includes real-time, service-level performance monitoring and reports, as well as deeper insight into undefined applications, the company says. It also will unveil the NP-3000, a 2U appliance designed to handle higher traffic volumes than existing appliances can.

The NP-3000 starts at about \$40,000 for an enterprise version. A typical Network Physics deployment could include two or three distributed appliances and one NP-Director. Pricing could start around \$150,000 to \$250,000, depending on network configuration. ■

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Source: The Tolly Group, October 2005.



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Correction

■ The story "ISS jumps into e-mail security fray" (Sept. 11, page 74) should have stated that the maximum number of users that ISS' new Proventia Network Mail Security System appliance can handle is 10,000. Also, the correct spelling of the ISS senior manager of product marketing is Dave Ostrowski.



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HP watchers dissect board scandal

Customers, analysts keeping an eye on company's product focus, stability.

BY JENNIFER MEARS
AND DENISE DUBIE

Improving financials have brightened HP's outlook, but a scandal that has resulted in the resignation of the company's chairman, as well as state and federal investigations, could seriously tarnish HP's reputation as it seeks to stabilize itself, users and industry experts say.

"There just seems to be a lot — too much — fluctuation within HP," says James Maas, network monitoring engineer at Fresenius Medical Care in Lexington, Mass.

Maas, who also heads up the New England Chapter of Open-View Forum, an independent user group for HP's management software, says negative press and frequent executive changes concern him when it comes to the company's priorities going forward.

Last Tuesday, HP announced that Patricia Dunn, who ordered an investigation into leaks of company information to the media, would step down as chair-

man following the company's Jan. 18 board meeting. CEO Mark Hurd will succeed Dunn as chairman, while Dunn will remain on the board as a director, HP said.

Board member George Keyworth, who admitted to supplying information to the media, resigned on Tuesday, effective immediately. His resignation follows the resignation in May of board member Tom Perkins, who stepped down in protest over the way the investigation was being handled.

Perkins' concerns were made public in a Securities and Exchange Commission filing two weeks ago, in which HP admitted that the investigation included the use of pretexting, in which investigators posed as journalists in order to get access to phone records.

"We are in negotiations with the company now and all we see is a lot of negative press coming from the board. I know it is a big company, but it makes me wonder how stable HP will be in the

future," Maas says. "You have to ask yourself, 'Am I making the right decision investing in this technology?'"

HP needs to demonstrate that it is focusing on its products and not get bogged down with issues regarding the board, he says.

"The company has to be sure to let me as a customer know what they are doing to move past the negative times and onto developing the products I use," Maas says. "The executives need to focus on the business I realize, but they also need to be sure to continue expanding the scope of their products and detail to customers the future of their technology."

Analysts agree, saying that while many customers may not pay much attention to the board scandal now, if the issue drags on it could damage HP's business.

"The board's tactics were inexcusable, but essentially isolated from customers, at least in every practical sense. But if the various investigations drag on, public

perception of HP is likely to go downhill and that could cause concern among customers," says Charles King, principal analyst at Pund-IT Research.

At the same time, the board shake-up will give Hurd the chance to make any changes he sees necessary at the board level. Hurd has been commended by Wall Street for setting HP back on course since he took over as CEO, replacing Carly Fiorina a little more than a year ago.

While the shift could be a benefit, some analysts question whether the outcome will end up being more of a negative factor.

"The move is generally toward more board independence, so adding chairman to Hurd's titles does not seem like a particularly

positive step," says Gordon Haff, an analyst with Illuminata. "I don't see it as directly harmful, but we are ultimately left with an HP board whose influence has to be significantly weakened."

For the most part, analysts and customers say HP made a good move by asking Dunn to resign and that every effort should be made to move HP beyond the scandal.

"HP's stock is back up, and their financials are holding. I suspect that most of the public is not really interested in these kinds of stories except for the brief moments of time when they break into the headlines," says Rich Ptak, principal analyst with Ptak, Noel & Associates. "I suspect most people think it is just a slightly overzealous executive chasing a disloyal employee. They aren't going to go any deeper in the analysis than that. I think as long as HP successfully implements its business strategy, it will continue to do well." ■



Patricia Dunn: Out as board chair.

Centennial refines storage control

BY JOHN COX

Centennial Software has released a new version of its software for controlling the use of portable storage devices on enterprise laptops and desktop PCs.

Version 4.5 of DeviceWall lets network administrators track what users do with files, and grant temporary access to storage devices such as USB thumb drives at specific times or for a given amount of time.

DeviceWall's user interface has been redesigned so that it conforms more to the look and feel conventions in Microsoft XP and upcoming Vista platforms. The installation wizard has been revamped to simplify loading the client software. And Centennial now supports the open source Apache Web server in addition to Microsoft Internet Information Server.

Centennial was founded in 1997, originally to market a software program to manage the Y2K transition for enterprise customers. It then offered a network asset discovery and audit application, and introduced DeviceWall in April 2005 to control storage peripherals on laptops. Centennial competes in this segment with a number of companies including Safend and Smartline.

The new version of the client can now record read/write/delete/rename actions done to a given file or group of files. When the laptop reconnects

with the corporate network, the agent code passes this information to the DeviceWall management console.

Currently, this data is stored as an audit history, which the administrator has to call up and review. In the future, DeviceWall plans to create a set of alerts so that administrators can be notified automatically if unauthorized actions are taken on specific files, says Brian McCarthy, Centennial's vice president of marketing.

"This was the number-one [change] request from our customers," he says. "They wanted to know who was copying or moving what information."

The new version also refines the control over USB flash drives and other storage media. The previous version could block the use of such devices, including U3 smart USB drives or DVD drives, but an administrator could temporarily unlock the device at a user's request.

In the new version, administrators can schedule temporary use, say between 2 p.m. and 4 p.m. on a given day, or grant use for a specified time span. After that, DeviceWall would restore and enforce the standard enterprise security policy for the devices.

The new version costs about \$28 per user; volume discounts for 1,000 users brings the price down to about \$19. ■

Sprint Nextel, Verizon Wireless air EV-DO plans

BY DENISE PAPPALARDO

Sprint Nextel and Verizon Wireless, the leading EV-DO wireless service providers in the United States, both announced at CTIA Wireless IT & Entertainment in Los Angeles last week plans to bolster support for EV-DO Revision A.

Sprint Nextel is adding more EV-DO Rev.A devices to its line of compatible gear, and Verizon Wireless announced that it will be using Motorola network gear to upgrade to Rev.A.

EV-DO Rev.A supports high-speed wireless data transmissions with peak data rates of up to 3.1Mbps downstream and 1.8Mbps upstream; and it is said to better support VoIP, high-speed file transfers, real-time services such as push-to-talk, mobile television and video telephony.

Current EV-DO deployments max out at about 2.4Mbps.

Sprint says it is making two additional wireless cards available to customers in the fourth quarter: the Sprint Mobile Broadband Card by Pantech (PX-500) and the Sprint Mobile Broadband Card by Sierra Wireless (Aircard 595). They will cost \$199 and \$99, respectively.

Sprint announced its plans in March to upgrade its wireless data network with EV-DO Rev.A later this year with faster services available in the first quarter of 2007.

The wireless service provider currently offers one Rev.A capable device, the Sprint Mobile Broadband Card by Novatel Wireless (\$720).

Motorola has been one of Verizon Wireless' network suppliers for a number of years. Based on Verizon and Motorola's new deal, Verizon will use Motorola gear to upgrade its first generation, EV-DO Rev.0 and Code Division Multiple Access 1xRTT sites to 1xEV-DO Rev.A. ■

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TECHNOLOGY UPDATE

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

Change control minimizes outages

BY JAY VAISHNAV

For many IT organizations, firefighting is a way of life to ensure service availability. This is because availability is constantly threatened by changes to the infrastructure that don't conform to IT service management processes and policies.

Change control software links IT service management systems and processes with the infrastructure by providing real-time change tracking, validation of change activity against change tickets, and automated enforcement of change policies. By using change control technology to close the change gap, organizations can increase the availability of IT services, enable the successful implementation of Information Technology Infrastructure Library (ITIL) projects and reduce the cost of compliance initiatives with regulations such as the Sarbanes-Oxley Act.

The people problem

Research has shown that as much as 80% of system unavailability is caused by incorrectly applied change. This includes changes made at unauthorized times or without approved change tickets, and can also include approved changes that are not properly executed.

Current change management processes designed to manage service availability rely heavily on people carefully following policy using manual methods, and are carried out with a limited understanding of the nature of change within the infrastructure. These processes cannot ensure that changes are applied correctly, as they would be if collection of data from the infrastructure and the

HOW IT WORKS: CHANGE CONTROL SOFTWARE

Change control software is installed on servers to link the IT infrastructure with change processes.

- Changes are tracked and validated in real time, and change policies are automatically enforced upon deployment.
- All changes are documented even if they come from outside of the change management process.
- Actual changes are correlated with change management systems for compliance audit and process improvement.

application of control to the infrastructure were sufficiently automated. Changes often are applied incorrectly, resulting in costly service outages.

Change control delivers, integrates and automates the following capabilities:

- Gaining real-time visibility into change.
- Linking actual infrastructure changes to change management processes and systems.
- Automating change policy enforcement.

IT organizations have typically used scan-based technology to troubleshoot service availability problems, running periodic system scans to analyze differences that might have caused an outage. Performance and operational overhead limit the frequency of scanning, resulting in an out-of-date view of the infrastructure.

Today, change control technology provides complete, up-to-the-moment information about changes to the infrastructure. As users implement changes to the infrastructure, change control software collects information in real time about what changes are being made, when changes are made, how

they are made and by whom. This information is then sent to a central repository where an administrator can securely access the information to determine actual change behavior and quickly search for forensic information to resolve service interruptions.

Once changes are tracked and understood, change control software categorizes the information to determine how actual changes deviate from the expected process. The completeness of the change data collected, combined with the fact that it is collected continuously and not in snapshots, enables highly accurate reconciliation with the change process.

The software automatically correlates actual changes with an existing change-ticketing system and automatically populates change tickets with actual change details when necessary. In the case where no documentation or change ticket exists, such as in emergency change activity, change control can close the documentation loop by creating the appropriate

change ticket for post-facto review and approval.

Once an organization establishes an approved change process, change control software provides the mechanisms required to enforce the policy. Change control software automatically ensures changes made to the infrastructure are in-line with the change policy and provides selective enforcement of policies based on criteria such as the source of change, the authorized time window for making the change and whether an approved change ticket is associated with the change. Change control can automatically allow programs that are authorized updaters to make changes without restriction, minimizing disruption to operational process.

If a user or program attempts to execute a change outside of an authorized update window, or if an unauthorized program tries to make a change, the changes are stopped before they occur. The software can also require that an approved change ticket ID be input and validated before enabling an update.

Managed service providers who require "five nines" availability use change control to reduce outages and shorten resolution time, while retailers are improving the auditability and availability of their payment infrastructures. Manufacturers also realize enormous cost savings by ensuring changes can only occur during scheduled maintenance windows.

Vaishnav is a vice president of product development for Solidcore Systems. He can be reached at jay@solidcore.com

Ask Dr. Internet

By Steve Blass

I bought a new laptop without a PCMCIA card slot and need a way to connect my PCMCIA-based EV-DO broadband wireless card so I can travel with the new notebook instead of the old one. Are there adapters available?

Yes, there are USB adapters for some EV-DO cellular modem cards that will let you use the PCMCIA modem card. Depending on the card and service provider, you may be able to use one of these adapters.

Unfortunately, the adapters available are not generic.

PCMCIA ports are more data intensive than USB ports, so it takes additional electronics to support PCMCIA over USB.

You'll need an adapter specific to your EV-DO modem card, and may even need one specifically designed for the service provider network you use. Allegiance Technology Partners, for example, has an adapter for \$200 that works with specific card models (www.nwdocfinder.com/5180).

In addition, USB EV-DO modems are beginning to be released that will plug directly into the USB

port, eliminating the need for the PCMCIA card (Sierra Wireless has announced some). Check your service provider's support Web site for information about adapters and options available for your particular service.

Be prepared to spend as much as you spent on your original EV-DO card — none of the available devices we found are inexpensive.

Blass, a network architect at Change@Work in Houston, can be reached at dr.internet@changeatwork.com



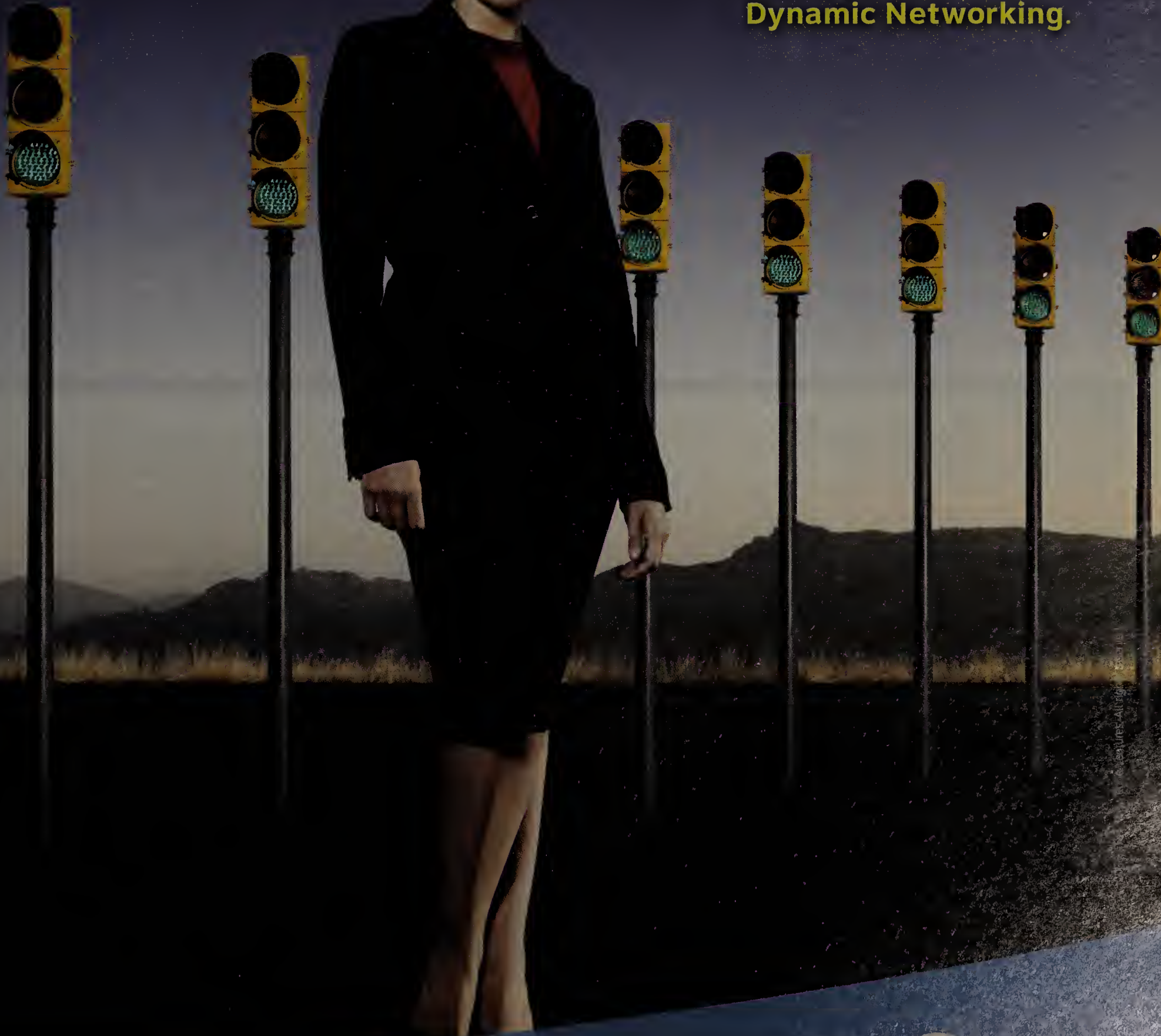
The World According To Paulina

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GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

Say you're writing a report on how your Web site's sales system has been performing, and you want to show the VP of sales the important statistics. You could hit her with one big graph or a set of graphs created in Excel, but you know she's not going to focus on anything that is too techie looking. Even so, you want to get the information into her brain as easily as possible.

Here's an example:

Oil prices fall for 7th straight session 64.85 60.03

The distinction between regular graphs and sparklines is subtle and powerful. Your average Excel chart most often is used to show as much data as possible, typically standing

by itself, separate from the text that describes it.

Sparklines, on the other hand, are intended to be part of the stream of text, instantly understandable without adding unnecessary detail. You can find Tufte's explanation of sparklines at www.nwdocfinder.com/5181.

Note that sparklines don't have to be lines — they can be bars, pie charts: whatever gets the message across.

To create sparklines you have several alternatives. You could create them in Excel, but that is not easy, even with a macro. Better choices would be a Web-based service that creates sparklines for you or software that operates as an

Sparklines are a simple, elegant idea.

add-in for Microsoft Office applications.

Our favorite Web-based service is the Sparkline Generator Web Application (www.nwdocfinder.com/5182) by Joe Gregorio. He provides an interactive sparkline generator and makes the CGI code available for free, so you can run the software on your own server.

His implementation is really nice; this reference to CGI code in a Web page ...

```
<p>Sales started to slump  yesterday.</p>
```

...will produce a sparkline like this:

Sales started to slump  yesterday

It would be easy to modify the sparkline.cgi request to work with dynamic data by using Asynchronous JavaScript + XML.

If you want to add sparklines to your Microsoft Office 2000, XP and 2003 documents, you might want to check out Bissantz SparkMaker (www.nwdocfinder.com/5183).

SparkMaker installs itself into Word, Excel and PowerPoint. It becomes available as a nonmodal pop-up when invoked from the application toolbar and provides a window where you enter your list of values and set up how the sparkline will be displayed. The output is inserted into the current document as a graphic or as text (using Bissantz's SparkFonts; go to www.nwdocfinder.com/5184 for details).

Under Excel it adds a function that creates a sparkline in a cell. Very cool.

Our only complaint is that SparkMaker needs a feature to reverse the order of the data — often data you copy from somewhere else is in the wrong order. So it would be much better to not have to paste the data into Word and then sort it, copy the new version and paste it into SparkMaker.

SparkMaker is really cool and is free for private and academic use, but at \$199 for commercial use, it is rather expensive.

Spark a conversation with gearhead@gibbs.com.



Cool Tools

Quick takes on high-tech toys. Keith Shaw

Here's a quick roundup of some cool in-car accessories that I've enjoyed recently:

The scoop: Supertooth II Bluetooth Speakerphone, by BlueAnt Wireless, about \$130.

What it is: A very portable speakerphone, the Supertooth II lets you talk hands-free wirelessly with any Bluetooth-enabled cell phone. The Supertooth II includes a noise-canceling microphone that pivots for the best positioning and includes a digital sound processor, built-in rechargeable lithium-ion battery (with up to 20 hours of talk time and up to 800 hours standby) and adjustable volume control.

Why it's cool: What makes this product shine is the magnetic clip that can attach to a sun visor in the car. This lets you perfectly position the device in the car for optimal sound quality and makes it extremely portable — need to switch cars? Just detach the Supertooth from the magnetic clip, detach the clip from the visor and you're off to your next location. It's also nice to have a speakerphone feature for those times when you have multiple people in the car, and you want them to hear and participate in the phone call.

Some caveats: I couldn't find any. Even the Bluetooth pairing process, normally a nightmare, went smoothly as long as I read the directions — once I knew what buttons to push, the Supertooth II paired with my Bluetooth phone quickly and easily.

Grade: ★★★★★ (out of five)

The scoop: RDS FM Transmitter/ Car Charger for iPod, by Kensington, about \$90.

What it is: This iPod accessory lets you play music and podcasts stored on your iPod (any model with a 30-pin dock connector, except the 3G iPods) via FM transmission

to your car FM radio. The gadget is powered by the cigarette adapter, which also simultaneously recharges the iPod. The device includes three presets that let you pick three FM frequencies in order to transmit over (the key is to pick a frequency where there's no signal to avoid any interference). The frequency is then shown on the display of the iPod, letting you switch your car stereo to that frequency.

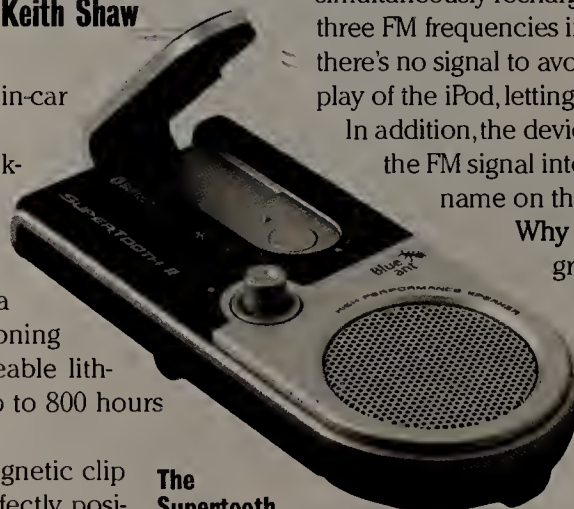
In addition, the device supports the Radio Data System, which transmits data over the FM signal into the car radio. This lets the gadget display song title and artist name on the car stereo.

Why it's cool: The sound quality from the FM transmitter was great — I didn't receive any static or volume issues that I've experienced with other iPod FM transmitters. I liked having the ability to charge the adapter while playing the music; I'm paranoid about my iPod battery life running out, so it's cool to be able to charge the device and listen to music at the same time.

Some caveats: The device works only when connected to the cigarette adapter, unlike other FM transmitters. In addition, because the gadget is connected via cable to the iPod, there's no good place to mount the iPod while it's connected, which means it will end up in the cup holder.

Grade: ★★★★★

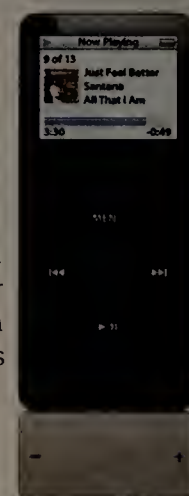
Shaw can be reached at kshaw@nww.com. Catch the Cool Tools Video Show every Thursday online at www.networkworld.com, and be sure to download the Twisted Pair Podcast every Friday!



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With Kensington's Car Charger, you can listen to your iPod over FM radio.



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On Technology
John Dix

VON spreads wings, embraces IP video

The Voice on the Network conference celebrated its 10th anniversary in Boston last week, with founder Jeff Pulver noting that the first show attracted 224 attendees while this one was expected to draw more than 10,000.

Instead of looking back at VoIP milestones, however, Pulver used his opening keynote to highlight developments in IP-based video, saying he believes it is the next big thing. His hope is to see the show help cross-pollinate ideas among the traditional VON crowd and newcomers pursuing the development of Internet-based entertainment.

The new technology will be so disruptive that the entrenched players will push for its regulation, Pulver said. But he predicts opportunities will abound. "Who starts the Vonage of TV?" he asked. "And if movies start to premier on the Internet, who's going to sell the popcorn?"

To bolster Pulver's point about the potential, the next speaker was Ted Leonsis, vice chairman of AOL, who said the company already has 45 channels on its video portal. That lineup includes In2TV, which viewers can use to watch old TV programs; in October the company plans to launch something it calls Uncut Video for shorts à la YouTube.

Many other speakers at the show focused on IP-based video, but one speaker from the traditional VoIP crowd was Jeffrey Citron, chairman and chief strategist at Vonage. He reveled in the fact that in the four years since the company launched its VoIP service, everyone has been predicting the company's failure — while on Labor Day it hit the 2 million subscriber mark.

Regional CATV and other players will lead in the local VoIP market, he said, but Vonage is 10 times the size of its nearest national competition.

Start-up Truphone can only hope for such a meteoric rise. The company was at VON to take the wraps off its VoIP service for cell phone users.

Technical Director Alistair Campbell said the Session Initiation Protocol-based service, which is still in beta, lets users with dual-mode cell phones (Nokia, for now) route calls over Wi-Fi links to the Internet. Once connected, calls can be routed over the Internet and connected free to other Wi-Fi-linked Truphone users, or connected at low cost to other cell phones or traditional land lines.

A call from a cell phone to a landline in England, where the company is based, costs 2.7 cents per minute, for example, while a cell call to a cell phone user in England would be 20 cents per minute. As a promotion, the company is offering free calling to landlines until Dec. 31.

There is still opportunity for innovation, it would seem, in the VoIP arena.

— John Dix
Editor in chief
jdix@nww.com

Opinions

Invest in American labor

Regarding Linda Musthaller's column "Recruiting solution: invest in U.S. workers" (www.nwdocfinder.com/5223): I agree completely. I constantly hear U.S. technology CEOs say they can't find qualified employees in the United States. I believe this is to reinforce their pleas to Congress to raise the H1-B quotas. It's easier to find highly educated employees in India and other countries because the currency exchange rates often work in the U.S. favor: \$40,000 a year goes a lot further in India than in the United States. Why don't we just extrapolate the equation and hire foreign CEOs? That would cut millions from the payroll.

Furthermore, if Red Hat is committed to hiring two-thirds of its new employees from abroad, then why should the U.S. government enforce Red Hat's intellectual-property rights? If a majority of its growth in employees is from India, let Red Hat seek its copyright protection from India.

Gary Tsuchiyama
Chicago

In reading Linda Musthaller's column on recruiting, I was struck by the line in which she appeals to Bill Gates to put his money where his mouth is and develop the next generation of computer scientists. I am with her on Red Hat's lack of interest in local investment, but I've always thought Gates (and by extension, Microsoft) had foundations and grant programs set up to distribute money and software to the technology-needy. A quick search of Google turned up a site (www.nwdocfinder.com/5224) with a splash page saying, "Microsoft is committed to building the pipeline of future computer scientists."

From previous employment, I know firsthand that Microsoft is one of the major providers of low-cost software to charitable organizations. Other partners

include Adobe, Intuit and HP. Red Hat is not among them. We also should be dismayed to find that Red Hat does have a scholarship program — in India (www.nwdocfinder.com/5225). Matthew Szulik wasn't complaining as much as he was explaining.

Mitch Enright
Network administrator
Orange County Employees Association
Santa Ana, Calif.

Red Hat CEO Matthew Szulik says his biggest problem is recruiting. He should have been honest and said his biggest problem is recruiting U.S. workers who will work for \$10 per hour or whatever IT workers get paid overseas. Szulik's problem is not a lack of talented U.S. labor; his problem is a lack of talented U.S. labor he can exploit at bargain-basement prices.

David Wisley
Lincolnshire, Ill.

When I was growing up, it was commonplace for companies to invest in their local communities to develop the proper skill sets necessary to help company and employees prosper. This was before the latest version of greed that permeates corporate America today. Instead of investing in the communities in which they operate, companies find it less expensive to develop talent overseas. They then use the sorry excuse of a lack of skilled talent in this country to meet their needs as the reason for outsourcing. American dollars are destroying America.

Anthony Davis
Director, production operations
NextAction
Westminster, Colo.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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www.nwdocfinder.com/1030



**SOX WATCH****Michael Kamens**

Change management is key to SOX success

While perusing a draft of "IT Control Objectives for Sarbanes-Oxley, 2nd Edition" (www.nwdocfinder.com/5178), I discovered several profound statements in the section on compliance and IT governance: "There is no such thing as a risk-free environment, and compliance with the Sarbanes-Oxley Act does not create such an environment. . . . Good IT governance over planning and life-cycle control objectives should result in more accurate and timely financial reporting." This thinking lets today's IT auditors focus on the key controls posing the most risk, rather than those on the fringe.

This tactic is having a major impact on management — substantially reducing the cost of the SOX audit by limiting testing to key controls — and on soft costs — reducing the amount of time IT groups spend compiling voluminous amounts of evidence for auditors. More important, we are seeing more knowledgeable internal SOX teams working in an environment with external accountants that's friendlier, in part because all parties have more experience working together.

This situation can save companies money, but only if their outsourced and in-house auditors understand the intent of the IT control objec-

tives. Companies must address the controls accurately and be diligent about staying within their scope. Without strict adherence to the intent of each control activity's description, teams often move in different directions. By the time a description is reviewed and people realize what happened, time has been wasted and the project is delayed.

Change management poses one of the most dif-

Change management poses one of the most difficult challenges to the IT staff.

ficult challenges possible to IT staff, because many companies don't have formal policies or procedures in place — a major requirement of SOX. When asked how they manage changes, most IT groups reply, "We know what needs to be done, and everyone works as a team." One of the most frequent questions I get from IT groups is, "When can I use an [IT change request] instead of a very detailed change management policy?" A proper answer is that an IT change request is used

for standard IT maintenance performed during regularly scheduled maintenance. Usually change requests do not have a substantial effect on the company's financial results.

A change-management policy is used for projects that could have a major effect on a company's financials. In the policy, the business process owner should describe what action is planned, the effect it will have, the benefits it will provide and the resources it needs, as well as the time-frame to complete it (including a back-out plan), a plan for user acceptance, and any other particulars. The policy is sent to all involved parties and a detailed plan is laid out that must meet everyone's approval. When a project has a major effect on financials and requires several groups to participate to ensure a successful completion, the risk level is high. The change management policy must be followed, and the IT auditors will be testing to see whether your organization adhered to its written procedures.

Kamens has a law degree, is a certified information security manager and is director of IT at Accume Partners. He can be reached at mka@accumepartners.com.

**ABOVE THE CLOUD****James Kobielus**

Real-time needs drive data retooling

Business battles are fought in real time, and IS must keep pace. Real-time business intelligence infrastructures promise a never-ending stream of fresh information, insight and decision support to frontline knowledge workers.

Nevertheless, real-time business intelligence has not graduated to enterprise primetime yet. Most production business-intelligence implementations rely on data warehouses, which consolidate operational data loaded via scheduled batch transmissions rather than real-time updates from source databases. As a result, many organizations have rich stores of historical data in their data warehouses, but few contain information that is refreshed continuously.

A traditional data warehouse operates in store-and-forward mode, introducing latency into data delivery to reports, dashboards and other business intelligence applications. Most of today's data warehouses have been optimized for specific latency-producing operations: extraction, transformation and loading (ETL) of data from operational database management systems (DBMS); retention of that data in persistent repositories; and retrieval of that stored data into reports, graphical dashboards, multidimensional online analytical processing cubes and other business intelligence outputs.

It is possible to retool data warehouses to support real-time business intelligence. Some data warehousing vendors have begun to address these requirements in their products. Doing so requires that data warehouses — as enterprises' master data management hubs — be redesigned to serve also as real-time, application-layer data routers (in the broad sense of that term). For example, NCR

Teradata's active data warehousing adds support for near-real-time ETL and data delivery. Just as important, the vendor has added the policy-driven event detection, processing and notification features needed to manage the flow of real-time events between data sources and consumers, as brokered through the data warehouse.

Though organizations are beginning to use active data warehouses for real-time business intelligence, no one is seriously considering deploying them as general-purpose, application-layer routers, because data warehouses usually are deployed in hub-and-spoke configurations

For all its promise, real-time business intelligence has not yet graduated to enterprise primetime.

and thus can become significant bottlenecks. Some in the industry have proposed data warehouse federation to alleviate the potential bottleneck, but most federation scenarios are fundamentally hub-and-spoke, relying on common ETL tools, metadata repositories and data staging areas.

Fortunately, other architectural approaches for real-time business intelligence are being explored. Some firms deploy an operational data store, which is similar to a data warehouse but contains only the most current consolidated data fed in through ETL tools. Another popular approach is enterprise information integration (EII), which supports real-time, federated query

and update across distributed source DBMSs.

Unfortunately, there are no industry best practices for real-time business-intelligence requirements. Companies must sort through diverse approaches and try to implement them to leverage and extend their traditional, data-warehouse-based business intelligence environments.

Going forward, the data-management industry should define a clear set of real-time business-intelligence implementation best practices based on open industry standards, such as the various eventing, metadata and other interoperability specifications subsumed under the WS-* umbrella. Vendors should converge all real-time business intelligence approaches in a common service-oriented architecture framework, so that customers can deploy easily any mix of real-time, near-real-time and lagged-time business intelligence that suits their needs.

The stakes in all this are more than low-level protocol plumbing. Real-time business intelligence enables business agility through improved reporting, analysis and response to changing events. It also supports regulatory compliance. Section 409 of the Sarbanes-Oxley Act specifically mandates that companies perform real-time disclosure of material changes in their financial conditions "on a rapid and current basis."

How's that for a market driver? From a technical standpoint, how companies meet that real-time reporting requirement is entirely up to them.

Kobielus is a principal analyst at Current Analysis in Alexandria, Va. He can be reached at (703) 340-8134 or jkobielus@currentanalysis.com.

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Moving at the Speed of Business

Optimizing applications:
A proactive approach to
boosting performance

BY SANDRA GITTLEN

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Moving at the Speed of Business

For the past few years, IT managers have struggled to boost the performance of applications across the wide-area network. This has meant applying a hodgepodge of WAN optimization and application acceleration tools throughout the enterprise. Industry experts say this band-aid approach is a no-win for companies looking to consolidate resources and offer expanded data access to remote and mobile users. Instead, experts say, success comes from optimizing your applications from the outset.

"Acceleration has to be considered from the time applications are first rolled out," says Joe Skorupa, research vice president for enterprise network services and infrastructure at Gartner. He says, if done properly, application acceleration addresses one of the most important problems IT organizations face today: the reliable, dependable delivery of new and existing applications across LANs and WANs.

"Application acceleration tools enable server and data center consolidation and deployment of browser-based applications while lowering total cost of ownership," he says.

In fact, companies are counting on application acceleration to allow them to achieve two goals:

increase the amount of applications available to a widely distributed group of users, and centralize IT resources to lower operational costs.

Gartner defines two categories of application acceleration: application delivery controllers (ADCs) and WAN optimization controllers (WOCs). ADCs are used to improve the performance of Web-based and related applications at the network and application layers with techniques such as server load balancing and Secure Sockets Layer (SSL) offloading. They also deal with real-time protocols through data compression, traffic shaping, and quality of service. WOCs are used to address the performance of enterprise applications across the WAN. They focus on band-



Car Talk

Auto parts maker finds just-in-time peace of mind with Packeteer solutions

Following the merger that created the company, Inergy Automotive Systems embarked on a plan to converge all data, voice, and video traffic onto a single network. The Paris-based, global supplier of customized fuel systems to the automotive industry sought further efficiencies with a plan to centralize hosting of key applications and to consolidate servers across operations spanning 18 countries.

INERGY planners knew these moves would put unprecedented pressure on the company's global network, dubbed INNet, to deliver maximum uptime, availability, and performance. Adding heaps of bandwidth to provide the necessary quality of service (QoS) was out of the question due to the sheer expense. Planners also considered using router-based QoS capabilities to streamline traffic flow. That solution was also costly and would have required disruptive upgrades while ultimately delivering suboptimal traffic management capabilities.

Instead, the INERGY planners chose to deploy dedicated, state-of-the-art QoS appliances, adding these traffic management "mini-brains" throughout the network. This strategy would allow staff to intelligently analyze, classify, monitor, and ultimately control all INNet traffic while delivering predictable application service levels aligned with core business objectives. The

technology of choice was the PacketShaper from Packeteer Inc. (www.packeteer.com).

INERGY's planners identified Packeteer as providing "a complete set of tools that allows automatic management of a diverse range of traffic types."

The results for INERGY have been dramatic. INERGY estimates that the return on investment per installation will be achieved by avoiding a single network outage or loss of connectivity to an enterprise data center. Meanwhile, INERGY chalked up performance gains that include a 300% increase in effective bandwidth, a 50% increase in response to Web/HTTP service, a 75% decrease in server delay across the network, and a 60% decrease in network latency.

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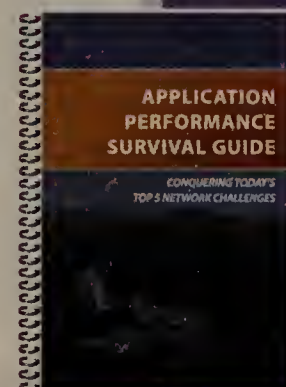
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width, latency, and protocol issues. This category features tools that use bandwidth shaping, quality of service, compression, and route control.

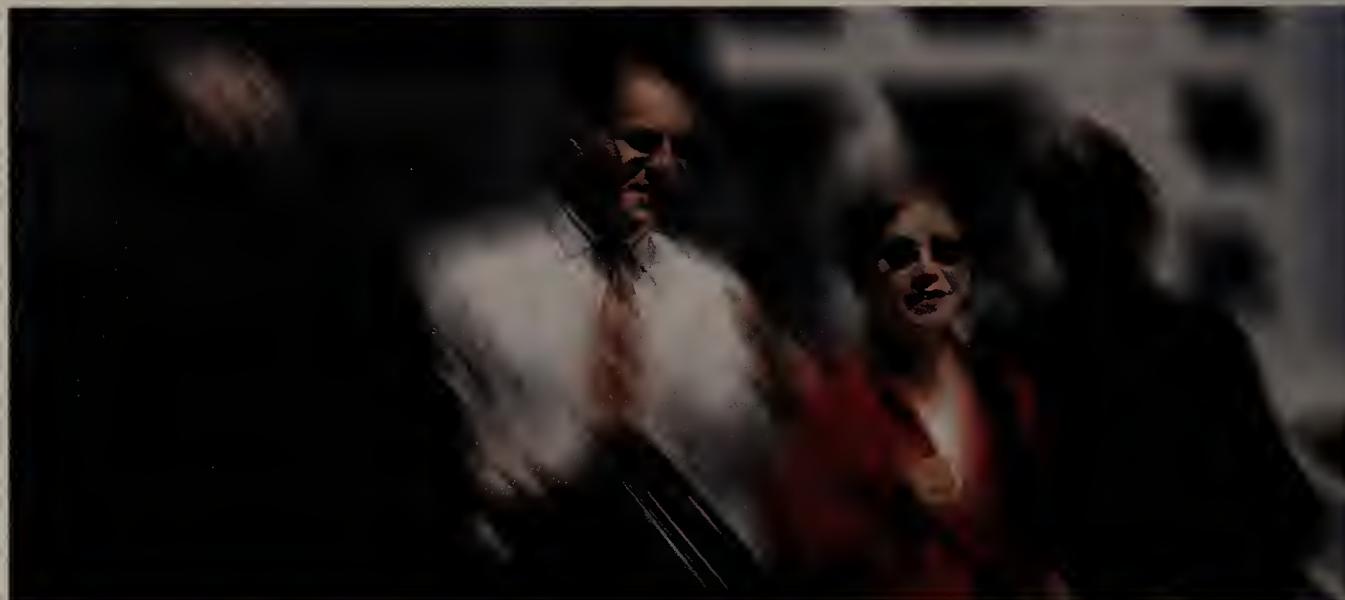
Gartner predicts that today's \$1.8 billion application acceleration market will grow to \$3.7 billion by 2008—with a healthy compound annual growth rate of 15.6% through 2010. At the heart of this growth will be a trend away from single-function boxes toward powerful platforms that deliver four or more functions—such as connection management and firewalling—to alleviate performance problems, Skorupa says.

THE CENTRALIZED DATA LOGJAM

Consolidating resources is a top initiative for most organizations. Federal and private sector compliance mandates, including the Sarbanes-Oxley Act, are forcing companies to pull data back from branch offices and remote locations into a central repository. At the same time, an ever-increasing pool of mobile and remote workers is generating more data.

These workers, often separated by long distances from their servers, need rapid and real-time access to mission-critical enterprise applications. Yet most applications that they are trying to employ were not designed to work over the long haul. For instance, Microsoft's Common Internet File System (CIFS) protocol, which is used for file sharing, is chatty and requires lots of back-and-forth between servers to transfer documents. Waiting tens of seconds, minutes, or even hours for backups or file downloads is unacceptable for today's fast-paced organizations.

"The biggest problem here by far is latency. The amount of time an application takes to traverse the WAN is increasing," says Robert Whiteley, a senior analyst for enterprise networking at Forrester Research. "Whether it's due to the distance, the 'chattiness' of a protocol like CIFS, or the fact that folks are using more real-time applications like voice over IP, users can't tolerate the 250-plus microseconds of latency that's not uncommon on the WAN."



Skorupa agrees. "We're asking the operating system to do things it was never designed to do. We went from one connection per user per file server per day to doing several thousand per hour. You can have 10 to 30 TCP connections per page. Web servers are just rolling over and playing dead," he says. This can severely hinder productivity and frustrate users. "To open a file with CIFS can take a thousand round-trips. It's a terribly bad protocol design," he says.

"The Internet is not designed for optimal performance," adds Tom Leighton, chief scientist and co-founder of Akamai Technologies Inc. in Cambridge, Mass. "Applications delivered over the Internet can suffer from latency and packet loss caused by congestion, outages, and problematic peering relationships. Globalization, combined with infrastructure consolidation trends, increases the distance between the origin and end users, which increases the impact of the Internet's performance problems on enterprises."

In addition to the inherent problems of accessing traditional applications over the WAN, such as those from SAP, SQL, and Oracle, Whiteley says a shift in the types of applications users want to access is putting pressure on application performance. "We're moving from transaction-based environments to interaction-based environments that depend on real-time information and collaboration," he says.

He points to the rise in high-level IT efforts such as service-oriented architectures, RFID, unified communications, and video content, all of which are vying for priority across the WAN. "These are all pushing the need for optimization of WAN latency and throughput issues," he says.

Mark Urban, director of product marketing at Packeteer Inc. in Cupertino, Calif., says this blending of applications across the wide area is a major challenge for IT. "The biggest problem is the diversity of the environment today. Ten years ago, you might have had mainframe systems, thick clients, and possibly some e-mail. Five years ago, you had Web and Internet technologies, but they were still pretty basic. Now you have productivity applications from Microsoft, enterprise applications such as SAP and Oracle, dozens of recreational applications, all running across the same network as voice and video," he says.

"The struggle from the network side is to understand the totality of what's on the network and how to manage through this new environment," Urban says.

BAND-AID SOLUTIONS ARE NO SOLUTION

IT managers have tried to solve application performance issues in myriad ways, including putting in piecemeal software, hardware, and services to address one-off problems.

"They've tried doubling the amount of memory; that doesn't help. They've tried doubling the amount of processors; that doesn't help. They've even tried doubling servers, but that leads to expensive licensing and the need for more network administrators," Skorupa says.

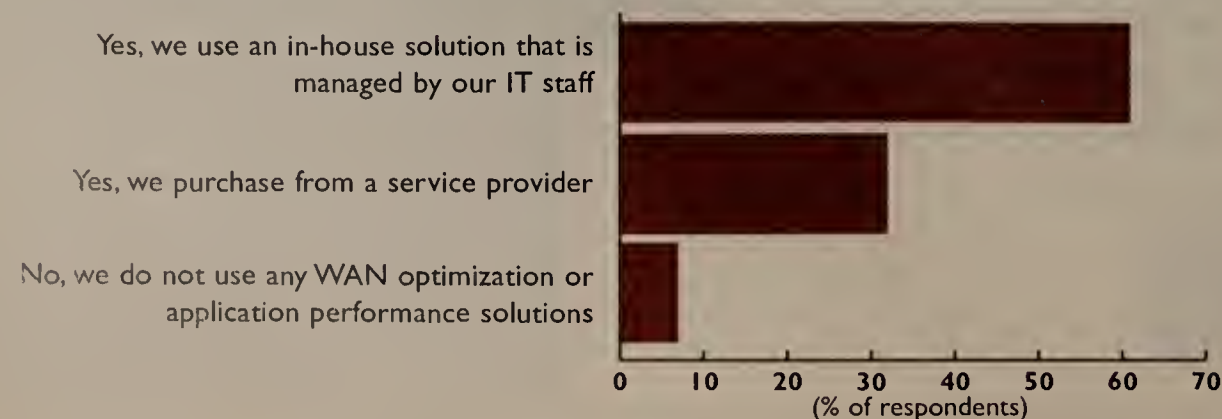
More recently, they've dipped into the application acceleration tool pool, applying best-of-breed gear and services at various points in the network in the hopes of stumbling upon a solution.

But this approach has led to another layer of management attached to each application. For instance, enterprises have deployed separate application firewalls, caching services, SSL offload devices, and TCP optimization tools.

This can create a catch-22 as addressing the

THE NEED FOR SPEED

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Through the use of Stampede's solution, Friendly's was able to reduce average task time by 75%, and total transaction time by over 50%.

While Friendly's is still considering network upgrades, Peter Palumbo, the company's senior IT director, had this to say: "The Stampede Application Acceleration Series will improve the end-user experience as we further evaluate our networking options. Even with upgrades to our network, the acceleration offered by Stampede will enhance whatever option we undertake."

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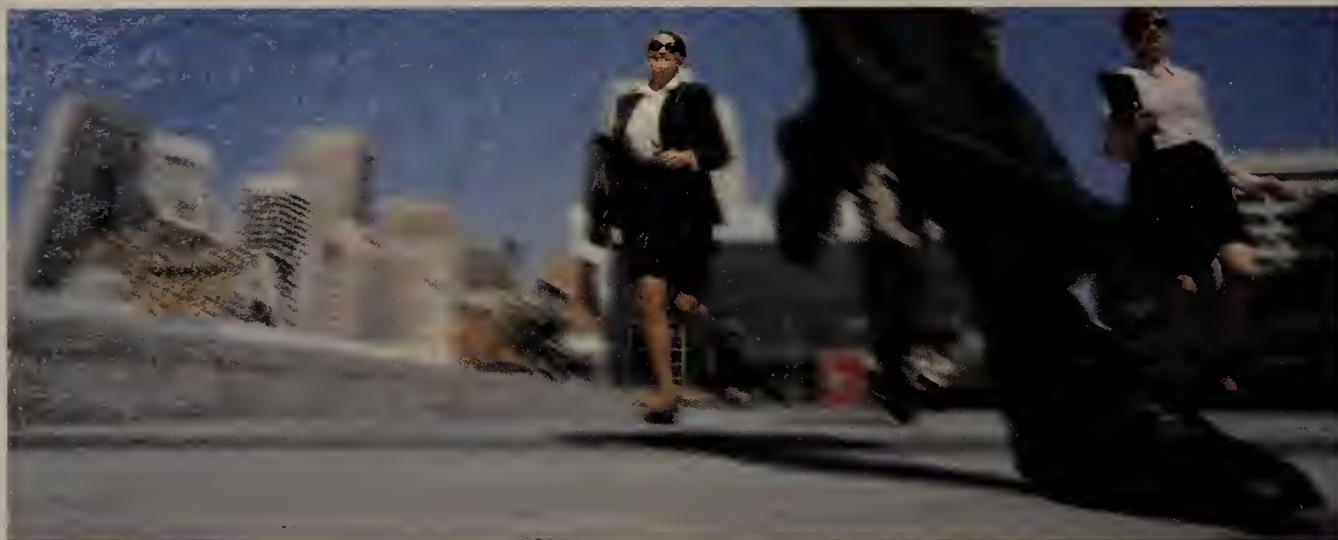
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needs of one application often impedes the performance of others in the network and doesn't address other issues, Urban says. "You can cause a lot of different problems down the chain. If you jump right in without getting a clear picture, you can miss the whole point of application acceleration," he says.

Gordon Dorworth, president and CEO of Stampede Technologies, Inc. in Dayton, Ohio, says the changing demographics and increased mobility of the workforce create problems for most application acceleration approaches. "As essential business applications are deployed to mobile users such as customer service representatives, salespeople, and other virtual users in their own locations and home offices, it's often impossible, usually impractical, and invariably costly to put hardware in all of those far-flung locations," he says.

He uses a retail chain as an example. "Say they want to provide e-mail access to each store—it is simply not practical or affordable to deploy application acceleration hardware devices at each location and expect nontechnical store personnel to manage an in-store server-based system or even the easiest-to-use network appliance," he says.

A CLEAR VIEW OF A CLOUDY NETWORK

To gain a foothold on solving application performance problems, experts say you must first understand the issues you're trying to address and what tools match these issues.

Urban recommends taking a step back and getting a clear picture of your network end-to-end. "As applications are consolidated back to the data center, we've sometimes seen a lot of application performance basics fall through the cracks. This has a terrible impact on the user base. Instead, companies should assess impact to the user experience before making significant changes," he says.

"You have to start with visibility. What are all the applications running on your network? Which are most important? What problems are they encountering?" Urban says. Then you work to match the tool set to the problems. "Are your iTunes downloads and MS patch distributions interrupting voice calls? Then you should work to

contain that traffic. Are you having challenges with file access over the WAN? Then you need to focus on latency and access."

Skorupa says it's critical to involve all stakeholders in the applications process from the beginning, including application developers, architects, security architects, network administrators, and systems administrators. He says executives should mandate that everyone be held responsible for the end-user experience. "It should be either sink together or swim together. Otherwise you're going to get a lot of finger-pointing and the system will break down," he says.

According to Forrester's Whiteley, the more involvement, the easier it is to pinpoint network bottlenecks. "Interview architects, operations managers, the help desk, and end users to determine if the issue is persistent and that poor app performance is actually causing pain," he says. This prevents you from overspending on problems that aren't mission-critical.

Whiteley also recommends that IT groups look for overlap if you're suffering more than one issue. Perhaps one tool can address your problems with CIFS and caching. Next, he says to work closely with your vendor to make sure that your road map matches theirs and you're not just buying a single-problem solution that you'll eventually need to replace. For instance, you can now get application acceleration tools combined with advanced security technologies such as SSL VPNs, firewalls, and intrusion prevention.

Another step, he advises, is to determine whether you'll build or buy. Until now, finding managed solutions that handle all aspects of application performance has been difficult, but

he says new options are coming into the market.

Next, he says to create a short list of solutions and pilot them. "We've found that most of our clients look to get three to five vendors into their labs for evaluation," he says. But Whiteley warns that labs don't always offer the best environments to recreate performance issues. Instead, you should deploy your top options in production networks. "This helps validate vendors' gaudy performance claims as well as assuage common reliability and scalability concerns," he says.

APPLYING THE RIGHT TOOLS

Once you've laid out your application and network problems and before you settle on a vendor, it's important to match the feature sets you need with the issues you're trying to solve.

There are several tiers to the decision-making process surrounding application acceleration. One tier involves whether to apply a symmetric or asymmetric solution. Asymmetric solutions are those that require hardware on one end of a connection, while symmetric solutions require gear on both sides of the connection.

For many Web-based applications, asymmetric offerings are the best approach to accelerate applications from within the data center. To speed branch-office and remote-user access, experts recommend the symmetric approach.

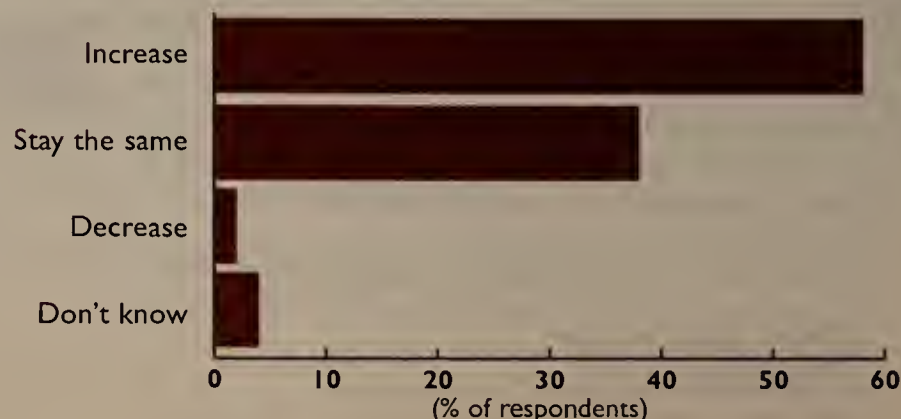
Asymmetric and symmetric approaches are available as hardware, software, and services. You can choose to implement them as an appliance, a managed service, or software that is automatically injected into the user's browser.

Next, decide if your problem is best solved at the data center, over the WAN connection, or a combination of both. This will determine if you look at application delivery controllers or WAN optimization controllers.

Within each of these categories, you'll encounter methods for optimizing HTML sessions, TCP/IP sessions, SSL tasks, content deliv-

GOTTA KICK THE BANDWIDTH HABIT

Over the next 12 months, what changes do you anticipate in total bandwidth for your corporate WAN?



SOURCE: IDC'S U.S. WAN MANAGER SURVEY, 2006

n=401

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ery, and more. Here are some of the techniques you can apply:

- Caching ensures faster delivery of content across the wide area by placing frequently requested information close to the user. For instance, objects in a Web page can be cached so that the time it takes to retrieve and build a page is significantly decreased.
- Compression allows the size of data to be reduced to shorten transmission times. Compression algorithms ensure that data is compressed at one end of a link and decompressed at its destination.
- Load balancing helps ease overloaded servers by intercepting application requests and forwarding them to less-burdened devices. That way a single server does not become a bottleneck.
- Offload devices allow the server load to be lessened by taking specific tasks and sending them to specialized devices. For instance, SSL sessions can be offloaded to a box that is optimized to deal with its requirements.
- Protocol optimization techniques are used to manage the handoff between inefficient protocols such as CIFS or TCP. These protocols are known for their intensive back-and-forth chattiness, and TCP and CIFS optimization help

lessen the demands of each session.

- Route optimization and quality of service address traffic priority requirements as well as issues surrounding WAN congestion. If you're trying to guarantee delivery of voice calls, you need to consider techniques that will prioritize traffic as well as find the best route through the network.

MARKET CONSOLIDATION

Once you've mastered these terms and settled on a strategy for improving your application performance, you have to take a good look at the market itself, according to Whiteley and Skorupa.

"This space is under heavy consolidation," Whiteley warns. He notes that vendors have been acquisition-happy, drawing in companies that add to their portfolios. "Why so much activity? Because suppliers of acceleration technology are aggressively adding features to collapse previously discrete markets and to provide one-stop-shop solutions," he says.

At the same time, Skorupa says there has been an influx of venture capital for start-ups so that new approaches can be put into the marketplace.

STEADY GROWTH IN A KEY MARKET

Worldwide WAN Optimization Revenue, 2004-2009



Another key change is the acceptance by big application vendors such as Microsoft, Oracle, and SAP that application acceleration has to be an integral part of enterprise application rollouts.

Skorupa says having them onboard is proof positive that the only way to succeed at boosting application performance is to have a proactive game plan.

Sandra Gittlen is a freelance technology writer in Northboro, Mass.

Meeting and Beating the Challenge of Latency

Q: WHAT ARE THE KEY CHALLENGES OF OPTIMIZING WEB-BASED APPLICATIONS?

A: Enterprises today are using the Internet to transport business-critical traffic to an ever-expanding global base of users. Businesses have learned that latency and availability issues associated with the Internet itself can be a bottleneck for obtaining good application performance, especially for long-distance traffic. Companies are also at the mercy of TCP/IP, an inefficient and chatty protocol highly sensitive to latency.

Q: WHAT CAN BE DONE ABOUT LATENCY?

A: While application acceleration techniques such as TCP optimization improve the number of trips required across the Internet, they do not address the underlying latency and packet loss on the Internet itself. Techniques such as route optimization can be employed to steer around Internet bottlenecks and optimize latency. It's important to architect a solution that accounts for data once it leaves the data center and enters the Internet "cloud," especially for global users.



Neil Cohen runs product marketing for Application Performance Services at Akamai Technologies Inc. (www.akamai.com)

Q: HOW IMPORTANT IS IT TO OPTIMIZE THE INTERNET CLOUD?

A: It's mission-critical. Globalization, server consolidation, and chatty Web 2.0 protocols such as AJAX either increase the distance or the number of passes across the cloud, producing the packet loss and latency that render applications unusable.

Q: WHAT DOES AKAMAI OFFER TO HELP OUT HERE?

A: Akamai employs typical application acceleration techniques like TCP optimization and compression, but we also optimize the cloud by employing techniques like route optimization, dynamic mapping, caching, and prefetching. With Akamai, caching and prefetching are performed as close as possible to the end user as opposed to within the data center. Plus, Akamai provides this as a convenient, managed service. This means users get all the benefits of application acceleration and our unique Internet cloud optimization without any infrastructure build-out, meaning there is no need to build, maintain, upgrade, or configure hardware.

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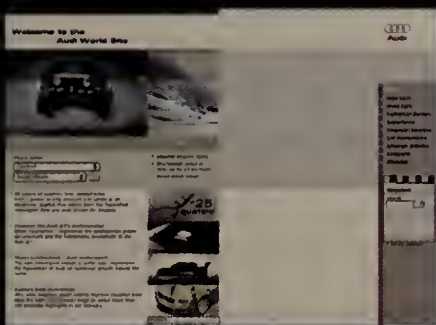
Audi trusts Akamai's globally-distributed network and application performance services to accelerate its dynamic Web applications without increasing infrastructure costs.

Application Acceleration Technology

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Reduced Total Cost of Ownership



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Best Practices Tech Tips, brought to you by Netcordia.

Network Analysis Tip # 67 – Switch Port Duplex Mismatch

Why is this important? Switch port duplex mismatch problems are a real pain!

They occur when the switch port and attached computer are not configured to use the same duplex setting or for both ends to auto negotiate the setting. Regardless of the setting the connection seems to work fine at low traffic levels, particularly for ping packets. But as the traffic level grows, the errors increase, affecting network throughput. Unless you monitor the errors on every switchport, you may not be aware of the problem. Errors will accumulate on each end of the misconfigured link. The half duplex end will see late collisions, alignment errors, and FCS errors. The full duplex end will see FCS errors.

Duplex mismatch is typically caused by configuration errors.

If one end of the connection is configured for full duplex, and the other end is configured for auto negotiation, the system configured for full duplex will not participate in the negotiation. The negotiation fails and the standard requires

network. Finally, there's the case where the configurations are inconsistently set on both ends of the link, such as would happen when a server that's configured for full duplex is plugged into a switch port that's configured for half duplex. The major source of errors is because the half duplex system will be sensing collisions and the full duplex system will not. That's why the errors are proportional to traffic volume. Pinging across such a link will work fine, because there is little traffic. However, as the traffic load builds, more and more collisions occur.

Manual determination: Periodically verify the server network connections to make sure that they are set up with either fixed speed and duplex settings on each side or that both are set to auto-negotiate. Checking for errors on the switch port is a simple check that is easier than trying to collect and verify the duplex settings on both ends of a link. For example, in the Cisco IOS, the command 'show interface fa0/1' would display the duplex and speed setting and the number of input and output errors. Manually checking more

Switch Port Duplex Mismatch [77]

Severity: Error Component: interfaces
 Correctness Penalty: -2 Generated: 2005-01-05 00:28:11.0
 Stability Penalty: 0 Modified: 2005-01-05 00:28:11.0

The following switch interfaces had an error rate greater than 0.01% of the total number of packets sent or received, which may indicate that the duplex setting for the interface does not match the other side of the link.

Rows 1-20 of 77

	IP Address	Device Name	Interface		Total Packets	% Errors
1	10.18.8.41	t12-4th-3548-2	Fa0/23 - FastEthernet0/23	In	96,658	35.06
				Out	225,396	0
2	10.1.8.4	tr3-c-6509-1	2/1 - 10/100 utp ethernet (cat 3/5)	In	4,464,732	34.46
				Out	4,641,769	0
3	10.18.8.20	t12-2nd-3548-1	Fa0/23 - 2122B	In	22,457	14.42
				Out	104,124	0
4	10.17.8.121	b2-2s-3548-2	Fa0/5 - FastEthernet0/5	In	10,697	8.42
				Out	65,044	0
5	10.17.8.161	b2-6s-3548-1	Fe0/2 - FastEthernet0/2	In	14,894	7.42
				Out	244,265	0
6	10.1.8.217	dist-ed-4503-1	Gi1/1 - Uplink to tr3-c-6509-1	In	660,897	7.23
				Out	227,397	0

equivalent to a bit error rate (BER) of roughly 10E-7 to 10E-8. A good LAN interface should have a BER of less than 10E-10, or one bit out of every 10 billion bits. On a 100Mbps link, that's one error for every 100 or more seconds of full speed operation. The switch ports are sorted by the percentage of errors. Any switch port handling more than 100,000 packets per day should be investigated. In the figure above, the inter-face in row 2 is handling 4.4 million packets, of which 34% are in error. This volume, along with the balanced packet count for input and output, indicates that the system connected to this port is likely to be a server. At these error rates, the applications on this server will have very poor performance. ■

Netcordia's products analyze, operate and optimize networks - easily.
Our NetMRI appliance has industry Best Practices, like the Tech Tip here, built in, with automatic discovery and operation

that the system configured for auto negotiation must use half duplex. So now we have one end configured for full duplex and the other end auto negotiated to half duplex. Duplex mis-match can also occur when a NIC driver doesn't remember its settings when the system is rebooted or it may not have been properly configured when a defective NIC was replaced. We've seen networks in which the number of duplex mismatches grew from 10 to over 70 ports over a two-month period, simply due to changes in the devices connecting into the

than a few switch ports is very boring and so it isn't performed as often as it should. Note that errors may also be caused by bad cabling, so even if the duplex settings are correct, identifying switch ports with high error percentages is an important periodic task.

Automatic determination: An automated tool, such as Netcordia's NetMRI appliance, identifies 100Mbps switch ports reporting more than 0.01% errors on either input or output. At an average packet size of 100 to 1500 bytes, this is

Terry Slattery CCIE #1026, is Netcordia's founder and CTO.

Terry co-authored "Advanced IP Routing in Cisco Networks", has several software patents and a prior company he founded trained over 35,000 network engineers.

To learn more, or get more Best Practices Tech Tips,
 see <http://www.netcordia.com/nw67>

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CLEAR CHOICE TEST

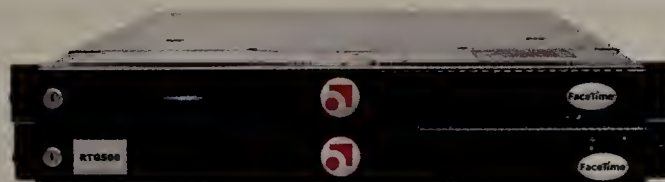
Zero-latency approach gives FaceTime edge

BY BARRY NANCE, NETWORK WORLD LAB ALLIANCE

Ridding a desktop or server of malware is like trying to kill kudzu, an out-of-control vine in the South that can grow 12 inches a day. Rootkit-based spyware is especially tenacious. Using Task Manager doesn't help, because the spyware process inserts Registry entries that cause the spyware to restart automatically. Using the Registry Edit tool to remove autorestart insertions doesn't work, because the instance quickly reinserts the autorestart Registry entries before you can use Task Manager to end the process.

An Internet gateway that prevents malware from reaching clients and servers is a much better approach than installing antispymware tools on each device. To find the best gateway-based system (either software or appliance), we invited several vendors to our lab for testing. We received FaceTime Enterprise Edition (RTG 500 device, IM Auditor software and Greynet Enterprise Manager), eSoft's ThreatWall 200 appliance and Gateway Anti-Spyware SoftPak, Barracuda Networks' Barracuda Web Filter 310, Aladdin Knowledge Systems' eSafe Gateway/Web/Mail V5.2 appliance and Web Security Pack, Trend Micro's InterScan Web Security Appliance 2500 and CP Secure's Content Security Gateway 1500 V2.0 with WebSense's Web Security Suite V6.2 (combination offering). We also downloaded Secure Computing's WebWasher Anti-Virus 5.3 and Secure Anti-Malware product. Three vendors (Sophos, Bluecoat and IronPort) were developing new product versions during our test cycle, and McAfee said it is retooling its anti-malware appliances.

All products tested fared well, with FaceTime Enterprise Edition edging out a strong field (three products tied for second with 4.1 scores). FaceTime earns a Clear Choice Award for its zero latency and easy-to-use central console for managing multiple appliances. The table below summarizes the success rates and performance results for each



FaceTime's RT Guardian appliance edged out other antimalware gateways with an innovative TCP Reset feature to create zero latency.

product (see How we did it, page 54). See related story on new approaches to malware at www.nwdocfinder.com/5226.

FaceTime Enterprise Edition

This system includes an RTGuardian (RTG) appliance, Greynet Enterprise Manager software and IM Auditor software. Impressively, the RTG 500 caused zero latency as it inspected inbound and outbound Internet traffic for malware and malware references. When it detected unmanaged instant messaging and peer-to-peer protocols (such as Skype) or malware coming over IM or peer-to-peer, the RTG 500 prevented the unwanted computer programs from entering our network by spoofing the source and destination machine addresses to send each session partner a TCP Reset packet. The TCP Reset instructs both sender and receiver to cease the current transfer of data.

FaceTime's use of the TCP Reset packet is extremely clever. The RTG appliance was never a bottleneck, because it doesn't sit inline between the Internet connection and the network. The appliance merely listens to the conversation flow and, when it detects malware, commands the client and the spyware host to halt. In other words, the appliance never has to act as a relay station. While some upstream routers may be

Still no definition of 'malware'

A lack of consistency in the way vendors define and recognize malware makes it impossible to enumerate the number of instances that each product recognizes. One vendor might inflate its count by including several kinds of browser cookies, while another might inflate its count by treating slight variations in a malware instance as multiple instances. A vendor that says it recognizes 5,000 distinct malware instances might actually thwart more malware than a vendor that touts a count of 50,000. We're happy to report that the vendors in this test are among the most honest in their counting methodologies.

Few vendors have fully embraced the proposed standards at www.antispymwarecoalition.org. To compound the problem, each vendor typically uses a different name to refer to the same spyware instance.

Even the tools that vendors use to thwart malware often have little relationship to the number of malware instances they handle. One vendor might recognize a particular malware instance via a file-specific signature, while another blocks the same instance by recognizing the exploit that it uses. Yet another handles that same malware instance via disallowing access to certain IP addresses or URLs.

The antimalware industry clearly needs a standard definition of malware and a standard method of expressing how many instances a vendor recognizes.

— BARRY NANCE

Antimalware gateway latency and accuracy

Product	Latency(nonexecutable)	Latency (executable)	Accuracy*
FaceTime Enterprise Edition	0 ms	0 ms	98.5% (69/70)
CSGateway 1500 (CP Secure)	15 ms	45 ms to 80 ms	98.5% (69/70)
InterScan WS 2500 (Trend)	16 ms to 25 ms	150 ms to 190 ms	97.1% (68/70)
eSafe Gateway (Aladdin)	18 ms	70 ms to 150 ms	97.1% (68/70)
ThreatWall 200 (eSoft)	18 ms to 25 ms	110 ms to 190 ms	95.7% (67/70)
WebWasher AV/AM (Secure)	20 ms to 24 ms	170 ms to 250 ms	95.7% (67/70)
Barracuda Web Filter 310	20 ms to 27 ms	180 ms to 230 ms	95.7% (67/70)

* Accuracy defined at time of testing. Because there are no standards for naming spyware instances, we are not naming the instances that got through. A vendor may know our instances as a different name — in addition, there are many variations of spyware instances and a vendor product may or may not handle the specific version of the malware instance we tested with.

programmed to discard the TCP Reset on its way back to the spyware host, you can reconfigure the upstream routers. Most important, the client gets the message to stop requesting the spyware packets.

The RTG 500 thwarted 69 of 70 malware instances with which we attacked our network. The device dealt comprehensively with Web-, Skype- and IM-borne unwanted programs. The 1U device connects to a span port on a switch or any hub port. FaceTime typically distributes malware definition updates twice a week but sends them more when it identifies critical threats.

For each event, the device collects date, time, spyware ID (its name), category (spyware or adware), type of attack (infection, phone home), threat rating, source IP address and number of attempts made. SNMP support for network-management system integration is planned, FaceTime says.

The Greynet Enterprise Manager (GEM) component is a central console that consolidates, in one place, the administration of several remote RTG units. A handy feature of

GEM is that it can detect and clean infected desktops without the use of an agent. The IM Auditor component helps the RTG 500 thwart and report on malware carried by IM protocols.

Aladdin eSafe Gateway/Web/Mail

Aladdin's environment consists of the eSafe appliance plus Spyware Neutralizer, an agentless central console for automatically removing spyware from infected clients. The eSafe appliance stopped 68 out of 70 malware instances. The eSafe device uses a combination of signatures, heuristics, behavior blocking, exploit recognition and blacklisting to keep spyware off the network. The blacklists identify Object-IDs of known malicious ActiveX objects, as well as malicious URLs and IP addresses. By recognizing their protocols, eSafe blocked all phone-home attempts in our tests.

The eSafe system worked with alacrity. It introduced an average latency of 18 msec for Internet traffic containing nonexecutable files. For executables (including spyware) of various sizes, eSafe took 70 msec to 150 msec to perform its analysis.

For each malware detection, the device records date, time, source IP address, protocol ID, type of violation and the name of the spyware instance or exploit. The system can integrate with network-management systems via SNMP

and syslog.

The standard eSafe appliance is a 1U device, and Aladdin offers several sizes, up to a fully populated IBM BladeCenter that Aladdin says can handle 42,000 HTTP connections per second. Spyware-definition updates are typically distributed every few days, but high threat levels can prompt Aladdin to send updates several times a day. The appliance checks for updates every few hours, and users can configure this interval. The appliance includes antivirus and anti-spam protections, which were not tested.

Barracuda Web Filter 310

The 1U Web Filter 310 device stopped 67 of our 70 malware instances. The Barracuda appliance identifies spyware by file signature, as well as URL and IP address connection attempts. The device automatically updates its definitions at a configurable hourly or daily rate, with hourly checks recommended.

Traffic other than executable files passed through the appliance with a latency range from 20 msec to 27 msec for each packet. The device analyzed executable files for spyware with a latency from 180 msec to 230 msec. Barracuda suggests using the Web Filter 310 to handle about 300 connections per second for best performance. If it detects a phone-home attempt, the system automatically invokes the

Barracuda Spyware Removal Tool, an ActiveX program sent to the client to kill the running spyware process and clean up the client's hard disk.

The Web Filter 310 records the malware's signature, its URL or IP address source, and the date and time of the client's near-exposure to the malware. The system integrates with network-management systems via SNMP. We didn't test Barracuda's IM Firewall, which the vendor says protects IM clients from IM-borne malware.



The CP Secure 2U gateway appliance uses WebSense's Web Security software. It stopped 69 out of 70 malware instances.

Content Security Gateway 1500 with Web Security Suite

The combination of CP Secure's 2U gateway appliance and WebSense's Web Security Suite derailed 69 of the 70
See Malware, page 54

NetResults

Product	FaceTime Enterprise Edition	eSafe Gateway/Web/Mail V5.2 appliance with Web Security Pack	ThreatWall 200 appliance with Gateway Anti-Spyware SoftPak	InterScan Web Security Appliance 2500
Vendor	FaceTime Communications www.facetime.com	Aladdin Knowledge Systems www.esafe.com	eSoft www.esoft.com	Trend Micro www.trendmicro.com
Price	Starts at \$7,000.	\$3,170 for 100 users; including first year updates.	\$1,600 plus \$699 for the Anti-Spyware SoftPak.	For 1,000 users, \$20,000 (appliance) plus \$5,600 (Damage Cleanup Services software).
Pros	Zero latency, good spyware recognition.	Low latency; SNMP support.	Low latency; SNMP support.	Low latency; SNMP support.
Cons	No SNMP support.	Documentation needs a little more explanatory text.	Doesn't use ActiveX Object IDs in its recognition of spyware.	Doesn't use ActiveX Object IDs in its recognition of spyware.
Score	4.55	4.1	4.1	4.1

Product	Content Security Gateway 1500 V2.0 plus Websense Web Security Suite V6.2	WebWasher Anti-Virus 5.3 and Secure Anti-Malware	Barracuda Web Filter 310
Vendor	CP Secure www.cpsecure.com	Secure Computing www.securecomputing.com	Barracuda Networks www.barracudanetworks.com
Price	\$24,000 plus \$30.75 per user per year for the Web Security Suite.	For 1,000 users, \$17 per user per year.	\$2,700 plus \$699 per year for updates.
Pros	Low latency; accurate spyware recognition.	SNMP support.	SNMP support.
Cons	No SNMP support.	Less accurate in its spyware recognition than others tested.	Doesn't use ActiveX Object IDs in its recognition of spyware; higher latency.
Score	4.0	3.6	3.55

The Breakdown

	FaceTime	Aladdin	eSoft	Trend Micro	CP Secure	Secure Computing	Barracuda
Identification/blocking 40%	5	4	4	4	4	3	3
Extra features* 15%	4	4	4	4	4	4	4
Performance 15%	5	4	4	4	4	4	3
Reports, SNMP alerts 10%	3	4	4	4	3	4	4
Ease of use/deployment 10%	5	5	5	5	5	4	5
Documentation 10%	4	4	4	4	4	4	4
Total score	4.55	4.1	4.1	4.1	4.0	3.6	3.55

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Subpar or not available

*Includes stopping phone-home attempts, definition update frequency.



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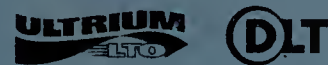
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Malware

continued from page 52

test malware instances. The device introduced a latency of 15 msec for Web traffic with nonexecutable files, and its inspection of executable files was remarkably quick, ranging from 45 msec to 80 msec. The CSG 1500 looked for spyware-definition updates hourly, and this can be increased to every 15 minutes or slowed down to once a day or once a week.

The Content Security Gateway (CSG) device integrates with WebSense Web Security Suite software, which you install on a server that you supply. While the Web Security Suite can use MySQL or the limited but free Microsoft SQL Server Database Engine as a repository for the malware-related events that it stores, CP Secure recommends that companies with large networks license and use Microsoft SQL Server. The Web Security Suite server helps the CSG 1500 appliance by supplying it with WebSense's malware signature, URL and IP address identities. The CSG device incorporates two malware-detection engines, Kaspersky's engine and CP Secure's own engine.

The CSG 1500 and Web Security Suite also thwarted the IM-borne malware in our tests. CP Secure says it will add SNMP support to the CSG 1500 later this year.



ESoft's ThreatWall 200 also offers options to counter spam, viruses and phishing attempts.

ThreatWall 200 with Gateway Anti-Spyware SoftPak

ESoft's ThreatWall 200 1U appliance stopped 67 of the test malware instances, and it imposed a latency of 18 msec to 25 msec as it forwarded nonexecutable Internet messages to clients. For executable files, the ThreatWall

200 needed 110 msec to 190 msec to analyze packets for potential malware. The device looks for definition updates automatically every 30 minutes, a frequency that can be changed to daily. The eSoft appliance blocked phone-home attempts, and unlike the other appliances, it scans FTP, SMTP and POP3 traffic in addition to HTTP as it looks for malware.

The ThreatWall 200 uses file signatures, URLs and IP addresses to recognize malware. For each spyware event, it records date, time, source IP address, destination IP address, spyware ID (name), network domain and type of malware. The ThreatWall 200 uses SNMP to integrate with a network management system.

In addition to the Anti-Spyware SoftPak, eSoft offers options for countering spam, viruses and phishing attempts. The SiteFilter option lets you directly control which URLs and IP addresses clients can or cannot access.



Trend Micro's IWSA 2500 is the hardware version of its gateway-based software.

Trend Micro InterScan Web Security Appliance 2500

For some time, Trend Micro has sold a gateway-based antimalware product in the form of software that is installed on a server. The InterScan Web Security Appliance (IWSA) 2500 is the hardware embodiment of that software product, enhanced to handle network traffic more quickly as it detects incoming malware. In our tests, the 1U IWSA 2500 parried 68 out of 70 instances. The device added a 16 msec to 25 msec latency for nonexecutable files, and it took 150 msec to 190 msec to investigate executable file packets for malware. Trend Micro updates malware definitions at least daily, and will distrib-

ute them multiple times per day during outbreaks. The update frequency is configurable by the user, and can be done every 30 minutes (default), hourly, daily, weekly or on demand.

The appliance identifies malware via signatures and a proprietary heuristics algorithm. It uses SNMP to integrate with network-management systems, and for each spyware event records date, time, spyware ID, spyware source, category, type of scan that detected the spyware, file name and destination (client) IP address.

The optional Damage Cleanup Services component, which installs on a Windows server, can automatically clean an infected desktop after the IWSA 2500 notes the presence of malware.

WebWasher Secure Anti-Malware

We downloaded Secure Computing's WebWasher Secure Anti-Malware software from the vendor's Web site, the only gateway software tested, and installed it on a server. The software can thwart spam and viruses in addition to malware. WebWasher disposed of 67 out of 70 test malware instances. We installed WebWasher on a HP ProLiant DL360 dual-processor server and got a latency of 20 msec to 24 msec for non-executable files. For packets with executables in them, WebWasher latency ranged from 170 msec to 250 msec. Secure Computing says WebWasher can scale to handle greater volumes of Internet traffic according to the processor speed of the server it is installed on.

Malware-definition updates can happen hourly, and the frequency of the software's automatic polling for updates can be changed to specific times each day. WebWasher incorporates SNMP support for integration with a network-management system.

WebWasher knows malware by its file signature, URL, IP address, ActiveX Object ID or through heuristic analysis that looks for specific known exploits and malicious behavior within a computer program. For each event, the product records date, time, source IP address, source URL, destination IP address, spyware ID, file size and file type.

State of the antimalware market

For all the tested products, documentation was comprehensive and clear. Installing each product essentially involved connecting it to our network and assigning an IP address.

All the products worked well in our tests. Because of its excellent accuracy rate and zero latency through the clever use of the TCP Reset command, as well as the central console which improves scalability, FaceTime edged out the formidable competition.

Using one of these gateways can prevent kudzu-like malware from infesting your network. The success rates and quick performance of these appliances led us to conclude that 2006 is the year the antimalware vendors have finally drawn even with the bad guys.

Nance runs Network Testing Labs and is the author of Introduction to Networking, 4th edition, and Client/Server LAN Programming. He can be reached at barryn@erols.com.

How We Did It

Focusing on gateway products, we primarily looked for the ability to identify and block malware (such as keystroke loggers, browser hijackers, adware, rootkits, dialers, data miners and Trojans). We wanted a product to prevent malware from sending data from our network (such as phoning home), identify already infected clients, handle Skype- and instant message-borne malware as well as HTTP-borne malware, scan traffic quickly, receive frequent spyware-definition updates, integrate with a network-management system (such as OpenView) and produce helpful reports on infection attempts and traffic statistics.

We collected a suite of 70 malware samples, and vendors gave us some additional test samples. We moved the collected material to an isolated, quarantined network, which consisted of three subnets. Subnet 1 had 10 client machines with a variety of operating systems, including Windows NT, 98, 2000, ME, XP, Red Hat Linux and Macintosh OS X. Subnet 2 contained three Web servers (Microsoft Internet Information Server, Netscape Enterprise Server and Apache), three e-mail servers (Exchange, Notes and Sendmail), two file servers (Windows 2003 Advanced Server and NetWare) and two database servers (Oracle 8i and Microsoft SQL

Server). Subnet 3, simulating the Internet, had Web, IM and Skype servers and clients containing the malware instances and sporting "bad guy" IP addresses and URLs. Systems on the first two subnets accessed the third subnet as if it were the real Internet.

To measure performance, we used two time-synchronized protocol analyzers on the Internet and local network sides of the gateway device and examined the resulting packet captures to know the time taken by a device to forward or discard each network message.

Each gateway product connected our simulated Internet to the other two subnets. Client and server machines started off in a pristine state for each test.

Our clients and servers attempted to download malware from the simulated Internet. We noted how well the products identified malware traffic and blocked attempts by the malware to send data back to the source. We gauged success or failure by examining each machine for malware after each test. We looked for running malware processes, new program files (EXE, DLL or OCX, possibly marked with the "Hidden" attribute) and directories as well as Registry and Start Menu changes.

Lab Alliance

■ Nance is also a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry, each bringing to bear years of practical experience on every test. For more Lab Alliance information, including what it takes to become a partner, go to www.networkworld.com/alliance.

CLEAR CHOICE TEST

Digging deep into your net with VoIP analysis tools

BY ANTHONY MOSCO, ROBERT SMITHERS AND ROBERT TARPLEY, NETWORK WORLD LAB ALLIANCE

If you can't see into the VoIP traffic on your network, then you don't know whether it's good or bad. To know whether voice quality or call connect issues are related to your VoIP IP/PBX system or are tied to underlying network issues, you'll need to turn to the evolving class of network monitoring products called voice-over-IP analysis tools.

Since our last test of these tools, VATs have picked up more monitoring power and offer a deeper level of detail in their displays regarding the VoIP activity of your network. Degradation of your VoIP traffic can be monitored, investigated and resolved before users are aware of it.

In this year's Clear Choice VAT test, six vendors accepted our invitation, submitting seven tools. The vendors included Apparent Networks, ClearSight Networks, Empirix, Fluke Networks, Touchstone Technologies and WildPackets.

All products were tested in Miercom's lab using a detailed methodology to assess the tools in six categories (see "How we did it" at www.nwdocfinder.com/5221). The categories are configuration and deployment options, display and interface usability, traffic capture and real-time monitoring options (see story discussing the benefits of these data gathering methods at www.nwdocfinder.com/5222), diagnostics and trouble-shooting measures, and reporting capabilities and advanced features.

ClearSight's Analyzer garnered the *Network World* Clear Choice Award for its second year in a row. It topped our charts because of exceptional diagnostic tools and its advanced navigation and display features. Fluke's OptiView tool earned second place, showing strong in its real-time monitoring and reporting features. Here below is a product-by-product breakdown of how each tool fared when we plugged it in, turned it on and set it to watch our test network.

Apparent Networks' AppCritical

Apparent Networks' AppCritical tool, an active-mode monitoring system, has an intuitive, linear interface that provides very efficient access to information.

Collecting information on network activity and reporting on these captured statistics is one of the product's strengths. Based on applying a very small amount of traffic consisting of hybrid Internet Control Message Protocol (ICMP) style queries, it operates unobtrusively from a single installed location. In most instances a single site installation is sufficient to monitor the entire network. In some highly secured networks that limit ICMP activity, additional software probes called remote sequencers might be necessary to overcome restricted boundaries. They are installed on the remote hosts. With its unique architecture, this was far

easier to deploy in an enterprise network compared with the other VAT products tested.

In our traffic-capture category — which assesses each product's awareness of network conditions and VoIP endpoints — AppCritical leads the pack, because it was very strong in collecting the data necessary to identify certain network conditions (such as the loss of an IP WAN connection, call controller or gateway) that would affect VoIP applications. It also had a high degree of success in pinpointing the cause of degradation in call quality, and its expert-commentator-like interface helped diagnose network issues.

AppCritical has one of the best and highly developed help and analysis support interfaces we have tested. Reports and quality-assurance threshold alerts contain links to background information to assist in explaining the contents.

Where this product fell down was in its lack of real-time analysis tools.

ClearSight Networks' Analyzer

ClearSight offers both stand-alone and distributed versions of its Analyzer product. The distributed version allows for multiple sites to be simultaneously monitored, either individually or in aggregate, a condition that earned it high marks in the deployment category.

Analyzer's interface is intuitive and unique, displaying more network activity in one place by default than any other product tested. In addition, it is designed for drilling down to greater detail, without opening multiple separate windows in a desktop-type interface. The tool's default interface displays a summary graphic view of all active and non-active protocol sessions on the network.

The VoIP protocols tracked by ClearSight include Session Initiation Protocol (SIP), Skinny Call Control Protocol (SCCP), H.323, Megaco, Media Gateway Control Protocol (MGCP), to name a few. Unknown protocols are displayed in a generic traffic category. The default navigation tabs include summary, detailed and combined-flow views.

Its reporting for monitoring and threshold responses is generally very good. We did have difficulty in detecting a duplex mismatch between sites at the router/switch level. That aside, Analyzer excelled in its ability to monitor our test network and was able to perform all the diagnostic

tasks we required of it. What distinguished the performance of this product was its ability to provide the administrator with the top-level information and then to drill down into and fix a reported problem. For example, in a summary view, the RTP traffic report can be used to display the detail of the RTP stream, playback any captured file, codec and/or call quality detail without losing the visual or logical context of the tool navigation.

ClearSight Analyzer stands very strong on the scope of the audio and video codecs it can recognize and analyze, and also the ability to assess mean opinion scores (MOS) through generated, simulated traffic and by monitoring actual user traffic. In addition, ClearSight's Real Time ladder view with TCP/IP and application-anomaly detection makes it easy to make changes and see the effect of the change without recapturing and recombining traffic.

Empirix's Hammer Call Analyzer

The Hammer Call Analyzer (HCA) is best used as a traffic capture and diagnostic tool, not a real-time monitoring one. It excels at detailing captured data for further investigation. The HCA's mode of operation is passive — listening to traffic rather than generating packets for transmission and comparison itself. The Call Analyzer has the ability to display the actual sound waveform for both sides of the call, allowing visual analysis of problems between the various devices.

The HCA provides the most customizable, detailed level for setting up triggers. A trigger is a set of predetermined conditions that will start the capture of session data automatically. Triggers can be set for pre- and postevent actions on a given threshold or level of session activity. The fine degree of control for setting up triggers gives the tool a pseudomonitoring capability, such as continuous real-time.

The HCA offers a display of VoIP sessions, which serves up an effective capture view. The user can correlate and visualize call flows among any combination of the following protocols: SIP, Megaco, MGCP, ISDN, Signaling System 7 (TCAP and SCCP), H.323, T.38 and Simple Traversal of User Datagram Protocol. The Call Merge capability allows you to follow the flow from end to end.

Empirix also offers an optional ISDN card, which gives you a good look at your ISDN traffic, including such details as call setup and teardown. Additionally, the ISDN card allows the use of the Call Merge Map, which gives managers the ability to associate calls that change in protocol, such as a call that starts as ISDN, is converted to H.323 and then back to ISDN. This is useful in a hybrid environment.

Empirix was a bit off in our reporting category, because it does not create preformatted reports of system activity, as do the other tools tested. What it does export are in .csv and .txt files, which are more like formatted data files than a report.

Fluke Networks

Fluke Networks submitted two products for testing, its OptiView suite and the Visual Uptime Select tool, which was acquired in a recent acquisition of Visual Networks.

The OptiView product suite, as tested, consisted of the Protocol Expert and the Link Analyzer. The Protocol Expert is a software tool designed for use on lower-speed links (10/100Mbps) using a laptop. Typically, the Protocol Expert is deployed to capture and analyze VoIP traffic at the endpoint location. The Link Analyzer tool is installed on the main uplink or core server-farm link where aggregated

NetResults

Product	ClearSight Analyzer	Fluke OptiView Protocol Expert and OptiView Link Analyzer	Touchstone WinEyeQ	WildPackets OmniPeek Enterprise with VoIP
Vendor	ClearSight Networks www.clearsightnet.com	Fluke Networks www.flukenetworks.com	Touchstone Technologies www.touchstoneinc.com	WildPackets www.wildpackets.com
Price	\$20,000 for all software and includes one year of updates.	From \$9,500 for software; \$20,000 for Gigabit-capacity probe appliance.	\$21,600 for Software Professional version.	\$26,490 for one console and five engines.
Pros	Ease of use, intuitive layout, excellent navigation and drill down capabilities; top monitoring and threshold response reporting.	Acquisition/interface cards allow effective physical insertion into available network connection types; good reporting filter and template availability.	Strong capture-and-analysis tool with good real-time monitoring capabilities; easy ability to drill down to more detail with minimum navigation.	Ability to perform multiple captures with unique filter settings simultaneously with many and detailed filter options; excellent enumerated capture Peer Map display.
Cons	Little or indirect WAN status monitoring.	Although detailed, has limited structure in navigation and view.	Limited historical reporting.	Displays are generally clear but static, not tailorable.
Score	4.3	3.9	3.75	3.75

Product	Fluke Visual UpTime Select VoIP Module	Hammer Call Analyzer	AppCritical
Vendor	Fluke Networks www.flukenetworks.com	Empirix www.empirix.com	Apparent Networks www.apparentnetworks.com
Price	\$36,000.	\$24,975.	\$50,000, includes predeployment assessment.
Pros	Single point of management; rich assortment of monitoring options and reporting.	Excellent RTP capture and playback analysis; demonstrated supports of both IP & ISDN.	Ease of deployment, transparent to network boundaries; outstanding Reporting and Help system.
Cons	Limited capture-and-analysis capabilities.	Limited reporting of live traffic, limited report templates; limited alerting.	No live traffic capture capabilities; no live packet analysis.
Score	3.7	3.7	3.45

The Breakdown

	ClearSight Analyzer	Fluke OptiView Protocol Expert and OptiView Link Analyzer	Touchstone WinEyeQ	WildPackets OmniPeek Enterprise with VoIP	Fluke Visual UpTime Select	Empirix Hammer Call Analyzer	Apparent AppCritical
Configuration & deployment 20%	4.5	3.5	4.0	3.5	4.0	4.0	3.5
Display 10%	4.5	3.5	3.5	4.0	4.0	3.5	3.5
Traffic capture 10%	3.5	3.5	4.0	4.0	2.5	3.5	4.5
Real-time 10%	4.0	4.5	3.0	3.5	3.0	3.5	0.5
Diagnostics 20%	5.0	4.0	4.0	4.0	4.0	4.0	4.5
Reporting 20%	3.5	4.5	3.5	3.5	4.0	3.0	3.5
Advanced features 10%	5.0	3.5	4.0	4.0	3.5	4.5	3.0
Total score	4.3	3.9	3.75	3.75	3.7	3.7	3.45

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Subpar or not available

VoIP/data traffic traverses. Different network environments can be accommodated easily by built-in connections for the Link Analyzer, including 10/100Base-T, 1000Base-SX, 1000Base-LX and 1000Base-T.

The OptiView suite stood out in our Real-Time Features category, in which we assessed the level of real-time session detail that can be reported. OptiView has the ability to identify key nodes in the network by address and role, IP endpoints, call encryption recognition and the vocoder of a specific call session.

As far as diagnostics are concerned, OptiView automatically detects and identifies such network problems as loss of a gateway, controller or specific endpoint, and can detect call-quality degradation in latency, packet loss and MOS call-quality level. Fluke's Link Analyzer tool also features escalating notification processed and customizable alarms when network conditions reach predefined conditions.

OptiView offers many preformatted reports of the VoIP statistics collected and offers links to third party reporting tools like Crystal Reports.

Fluke's Visual Uptime Select is a traffic-analysis and network-monitoring application capable of displaying real-

time activity. It requires software agents to be installed at network monitoring points software agents to be installed at network-monitoring points to report VoIP traffic between the monitored sites back to a central administrative console. Overall, it has a strong inherent ability to report outages and error conditions on the network.

Visual UpTime is able to detect and report the loss of a WAN link, call controller or gateway with active alerts sent to its service summary screen, as well as report degradation in call-quality conditions (latency, jitter, packet loss).

The reporting capabilities are extensive, comprising a large library of customizable template reports. One of these template reports has basic statistical or metric fields, for all or specific sites or IP ranges, but it can then be altered to display just the information the administrator requires. Its straightforward, simple interface is efficient in determining and highlighting any issues with the network. This interface also offered quite a bit of flexibility in filtering and sorting the collected data.

TouchStone's WinEyeQ

TouchStone Technologies submitted the WinEyeQ

Professional tool for testing, but the company also offers Lite and Probe editions, which scale to different levels of concurrent sessions that can be monitored. In addition to the SIP and H.323 focus it held last year, TouchStone has added to its list of supported protocols. They are MGCP, Megaco, HTTP, SMTP, POP3, FTP, real-time streaming protocol, SNMP and Telnet. WinEyeQ also can capture video as well as RTP streams.

Designed for monitoring only VoIP networks, WinEyeQ provides the most efficient and direct product layout to facilitate analyzing a VoIP environment. Using a tabbed layout for navigation, one can progress left to right to high-level network activity by category to tabs with more in-depth information on active calls, registrations, recent errors and user alerts, to name a few. Also new to WinEyeQ is a command-line interface allowing for script execution.

WinEyeQ offers a unique real-time SIP device interface that can contact, query and even control SIP device settings. Called the Test Peering Fabric, this application can send a message to SIP endpoints and query them for an XML-formatted real-time status on the device, or pull down a call-summary file containing 160 metrics (also in XML for-

mat) at the completion of the call. This Test Peering Fabric lets an administrator broadcast status requests to multiple endpoints and change option settings for SIP devices so they can be remotely controlled and reconfigured.

WildPackets' OmniPeek

WildPackets' OmniPeek data-analysis tool provides an optional module, Enhanced VoIP Option, to provide VoIP analysis. OmniPeek has distributed capabilities that comprise software probes installed on remote-network subnets that report back to the main analysis engine.

OmniPeek's strength lies in the deployment flexibility of its data capture filters — the selection criteria for catching and storing VoIP data for subsequent analysis — and the detailed level of information they supply. OmniPeek has multiple options for setting what data to capture and the VoIP conditions that cause a preset capture to begin recording data. The precision of the filters avoids the collection of a voluminous log that could add time and overhead to the debugging process in the VoIP environment. OmniPeek allows multiple unrelated captures to execute simultaneously, with different filters and initiation conditions set on each.

One of OmniPeek's best capture-and-analysis features is the graphical Peer Map display. This shows a diagram of VoIP sessions visually with both endpoints enumerated along with visual representation depicting the relative percent of network throughput used by each session over the span of the capture. Hovering over objects in the Peer Map will generate pop-up boxes with further statistics about the object.

A unique analysis feature for captured .wav files lets an administrator replay the statistics of a captured call with the replay of the call in the same screen. A captured call under analysis can be examined step by step as the captured metrics are synchronously displayed on the screen. If the jitter or latency degrades in midcall, the replay can be stopped, in snapshot fashion, and all associated metrics examined for insight to the call and network environment.

OmniPeek did not show as strong in real-time monitor mode. The amount of VoIP data available in real-time monitoring is limited, because standard statistics such

as packet counts, network throughput percent and detected error are available only in summary aggregation by protocol. There are no drill-down capabilities to further explore issues with a particular device or IP address.

Conclusion

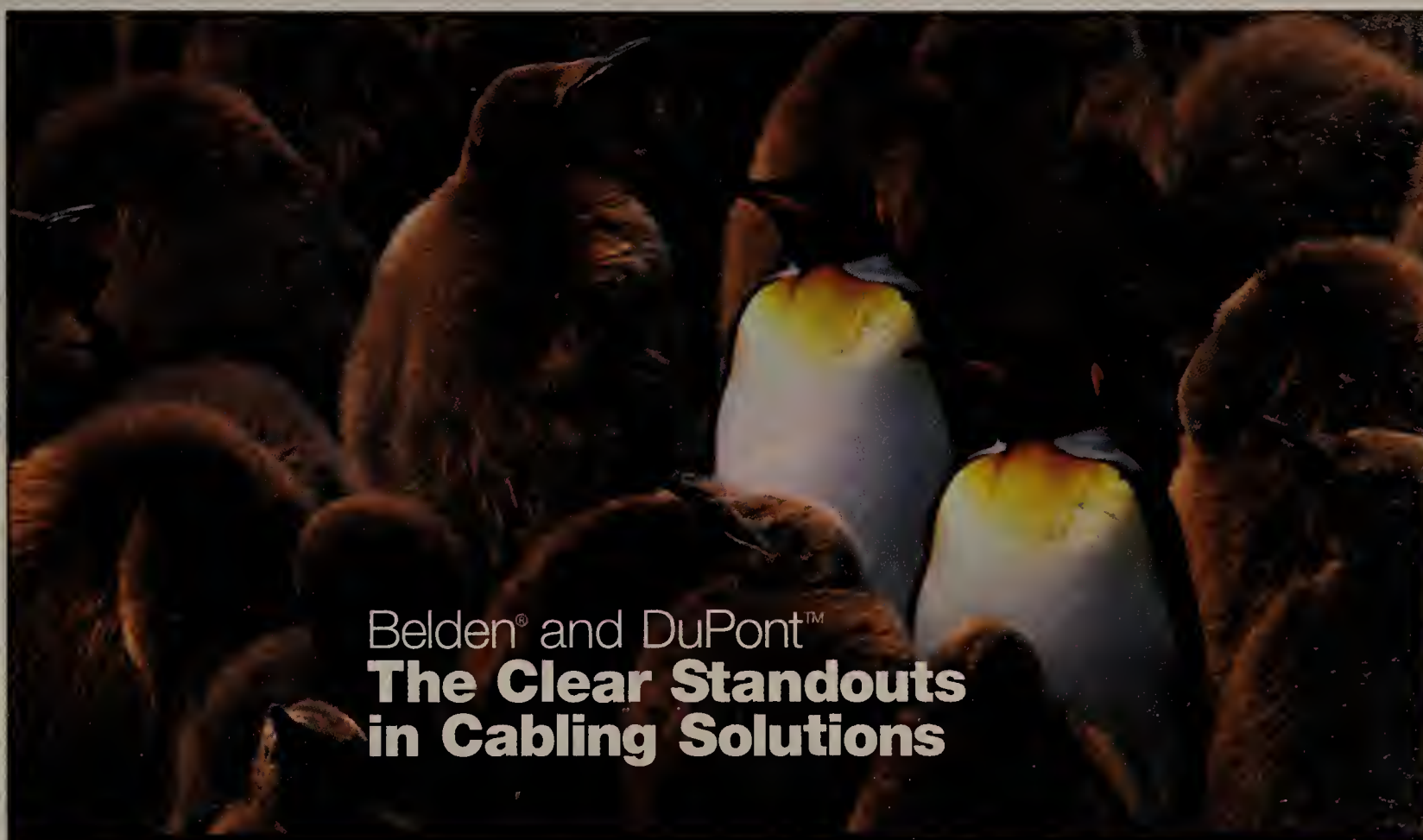
There is a general trend in this

class of product to increase protocol coverage, redesign interfaces for improved visual highlighting and navigability, and include advanced features to quickly pinpoint and detail problem areas of VoIP activity and call quality.

Consider with this improvement that there is no one right

or wrong way to implement a VAT. Most of the tools tested here could measure up in your network depending on the level of expertise required, the immediacy of problem resolution needed, the desire for proactive call-quality management, and the level of detailed capture data necessary.

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A combination of personality, motivation and skill makes for success in this field.

BY TIM GREENE

Perhaps that consultant whom your company hired to implement a VoIP rollout has you wondering: Could you break out of the safety of your corporate IT job and succeed as a consultant yourself?

If you are pondering this question, you need a reality check to determine whether you are cut out to be a consultant. Those who have made the transition successfully say it is a job with challenges that are quite a bit different from those corporate IT professionals face and that in some ways is more demanding than corporate IT.

"Think about when you call a consultant," says Matt Olson, CEO of Ocean Consulting in Portland, Ore. "You need to be prepared to deal with everybody's worst problems. Either everybody else failed, or their vendor or lead engineer is tapped out, and they need someone else to lay out a course of action."

Consulting can present more challenges than corporate IT, but it also holds the potential for more rewards, according to experts who have studied the field. IT professionals can boost their careers with stints as consultants, they say.

"A typical career path might be process management in a corporate IT environment, becoming the process owner, then an internal consultant, leave to join a consulting organization and come back into corporate IT as a CIO," says Laurie Orlov, a Forrester Research analyst who has studied IT careers.

Similarly, a corporate systems integrator might be promoted to systems architect, then leave the company to work for an outsourcer and afterward return to a corporate IT management job specializing in vendor relations, says Sam Bright, another Forrester analyst.

This pays off for the businesses that hire former consultants to fill IT executive slots, Orlov says. "A lot of CIOs who come from consulting have more advanced IT organizations that implement more of what are considered industry best practices," she says.

There also is the potential to boost income. "It's like any career move out of the standard, percentage-rate-increase raise and into a different salary band just by moving jobs," Orlov says. "Plus, the opportunity to participate in revenue-related compensation can be very attractive and something you don't see as much in corporate IT." In other words, if you do well, you get bonuses.

Other upsides of consulting for IT professionals are increasing job skills through varied assignments, the potential for higher salaries as a consultant and on returning to corporate IT, and the satisfaction of being in the middle of significant projects most of the time.

"It's like drinking from a fire hose," says Chad Fetzer, a senior systems analyst with Chicago IT consulting firm Agility. "It's more exciting than corporate IT. As a consultant you feel more valuable, because you were hired to fix a critical problem or design a solution because you have a specific expertise."

Traits it takes

Consulting isn't for everybody, however. Those who succeed need motivation, certain personality traits and broad technical skills.

"You have to be self-motivated," Ocean Consulting's Olson says. Nobody comes along to give you pep talks, and particularly if you are running your own business, you have to be able to withstand rejection when a potential client chooses someone else to do the job.

Consultants need self-confidence. "A lot of people have anxiety doing a cold call and sitting down with a client, but there's no way to get around it," Olson says.

The key is to ask questions and guide the decision-making process, he says. "Half the time the person on the other

side doesn't know exactly what they're looking for except a path to resolution of their problem."

Lance Candia, who runs Computer Network Consulting in Indiana, recently took a corporate IT job in a medical practice for the security it provided. He says it helps if you are born with the right personality, but you may be able to make do with the one you have.

He classifies himself as an introvert but that didn't work against him, because back-slapping salesmanship is not a requirement. "Some general managers or vice presidents see [quieter personalities] as pure, unadulterated honesty and think maybe not dealing with a salesperson is going to be a benefit," he says.

Consultants also need to be quick studies and grasp new technologies that may come up on the job. "You have to have the ability to learn on the fly and troubleshoot on the fly," Agility's Fetzer says.

Forrester's Orlov recommends that prospective consultants brush up on their speaking and writing skills, which are

essential to consulting. Clubs such as Toastmasters International can help develop skills and confidence in presenting material orally, she says. Writing proposals and seeking feedback can help tune up writing.

Such basics as being well-groomed are also key to making a good impression, Orlov says. "You will be dressed up and ready to meet clients," she says.

Consultants who go out on their own instead of working for large consulting operations need to worry about finances, because consulting jobs come in waves, and there can be downtimes for income. Computer Networks' Candia says he was able to start out in consulting because his wife could backstop the family finances. "I have a wife with a good career, and even if I fell on my face, she could keep paying the bills until something good happened," he says.

That ebb and flow of business introduces other tasks for the entrepreneurial consultant: If business is good, it may become necessary to hire more consultants to help out, so the consultant has to be a boss, too. And the more business a consultant gets, the greater the number of people who want to tell him what to do. "If you have 50 clients, you have 50 bosses," Candia says.

Fetzer says the most important thing a consultant needs is a family that backs his career, with its long hours and uncertain pay. "It can have a big hit on your performance if you're thinking that if you're not home at a certain time, your wife will be mad," he says. "If your family is happy, you perform a lot better."

Potential consultants also need to evaluate their technical knowledge and brush up in areas where the demand is high but their experience is weak. "If you've been in corporate IT for a while, you may need to go down to the basement, dust off your lab and work with the new stuff," Fetzer says.

Ten years ago during the high-tech boom, the expertise of consultants was not so much an issue because demand for them was so high, Candia says. Today, however, there is no substitute for having broad knowledge and skills. "This is not the '90s anymore," he says. ■

Consulting considerations

Before leaving the relative security of a corporate IT job for the world of consulting, corporate IT experts need to look within themselves and answer these questions honestly:

- Is my family prepared to see me less often?
- Am I willing to put in longer hours and be on-call most of the time?
- Can I work in a different environment every day?
- Do I have the financial resources to tide me over during lean times?
- Are my skills varied and up-to-date enough to address consulting challenges?
- Do I have the interpersonal skills to represent myself and my consultancy successfully?
- Can I rebound from rejection if I don't land a consulting customer?
- Do I have the ability to learn quickly what I need to know to handle network challenges I've never faced before?

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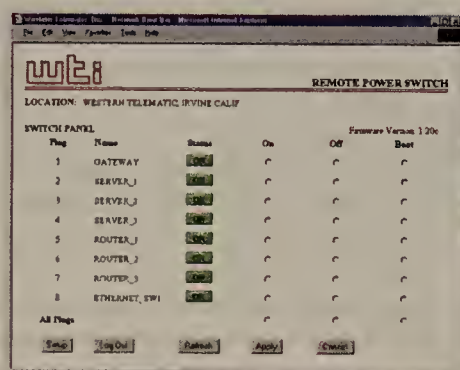
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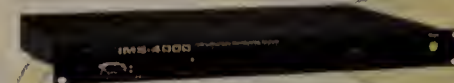
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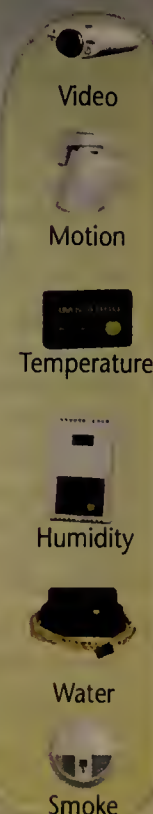


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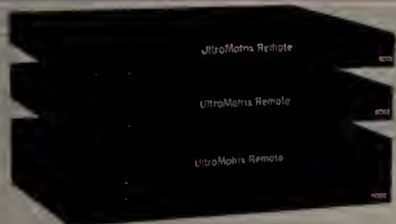
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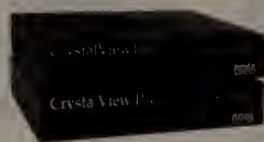
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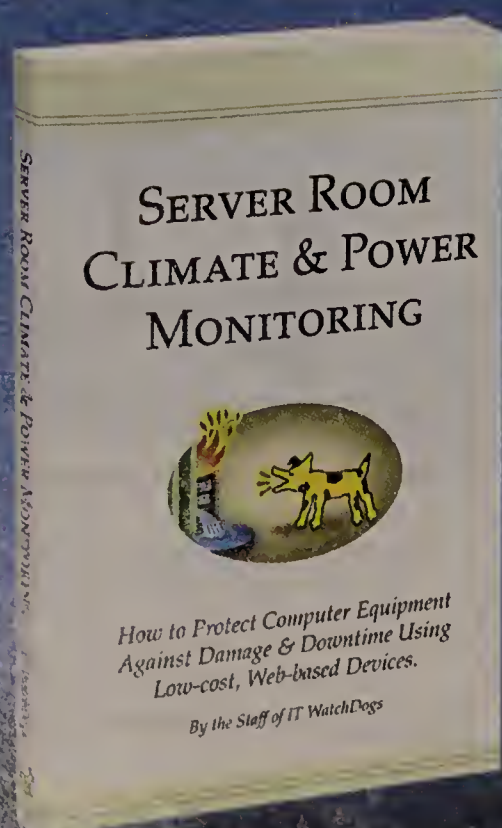
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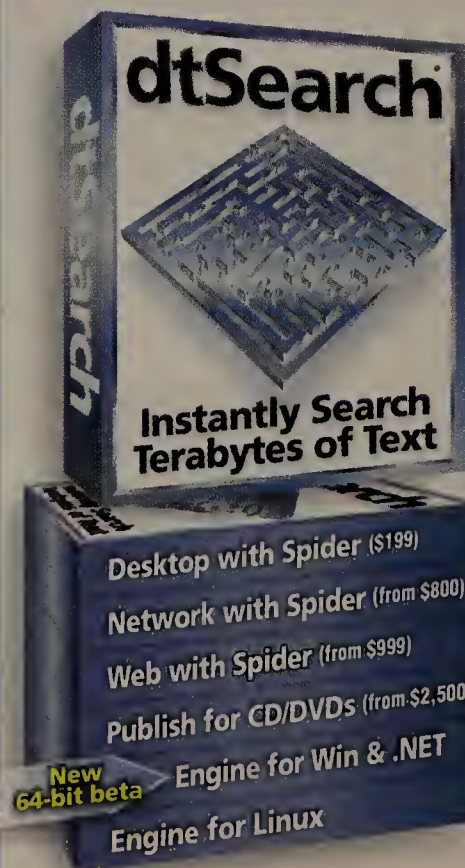


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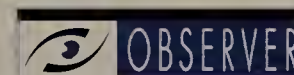
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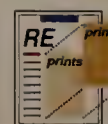
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Net Buzz

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couldn't give up use of the Web. Information that used to take days, weeks, months or even years to uncover can now be discovered in a few minutes. Patching my computer or getting the latest drivers now takes just a few minutes, while the same task would have taken days or weeks in the past (if it was possible at all). Getting rid of e-mail would just send us back to a simpler time, when interpersonal skills were necessary to survive. Doing without the Web would simply be a return to the Stone Age — give me a stone tablet and chisel."

Howard Stewart also would give up e-mail, but adds: "I have a question. What happens to all the spam I get now? Would it build up in a spam queue somewhere until it reached a critical level where it would explode in a giant spam mushroom cloud and inundate all the computers worldwide? I would hate to be the cause of such a disaster but I couldn't work the way I do without the Web."

Fear not, for we have alerted Homeland Security.

John Huie wants to split the baby: "At work? . . . Gotta have my e-mail. . . . At home? . . . Gotta have my Web."

As mentioned, some members of the Brigade did back flips to avoid having to choose.

"No way, dude. Can't do it. I'd get the DT's really fast and have to be carried away in an ambulance. The ER would have to bring out a laptop with wireless so I could get my e-mail fix and do a little surfing," laments Ken Diliberto. "I don't know that I could give up either."

After more hemming and hawing, however, Diliberto says he would "probably give up e-mail," before adding, "enough of this suffering."

And finally, we'll end with a fellow who chose Door No. 3.

"That is quite a choice," says Keith Rosenberg. "Being an IT geek, both are critical to my job and I really cannot do without either. . . . So I would get rid of both and get a job as a vacation tester!"

There's always room for another point of view. The address is buzz@nww.com.

Sam Houston

continued from page 1

In the Cisco model, each phone attached to the CallManager required a separate annual licensing fee to operate, Daniel said. In SHSU's Asterisk/Cisco model, where it will keep its existing Cisco phones but attach them to Asterisk servers on the back end, the phone licensing costs are eliminated.

SHSU has moved 1,600 IP phones from CallManagers to Asterisk, which runs the IETF-standard version of Session Initiation Protocol (SIP). The Asterisk functions are spread across six redundant Dell servers: two act as redundant PSTN gateways (and are outfitted with four-port T-1 cards from Digium, which commercially distributes Asterisk); two handle call processing; and another set provides voice mail.

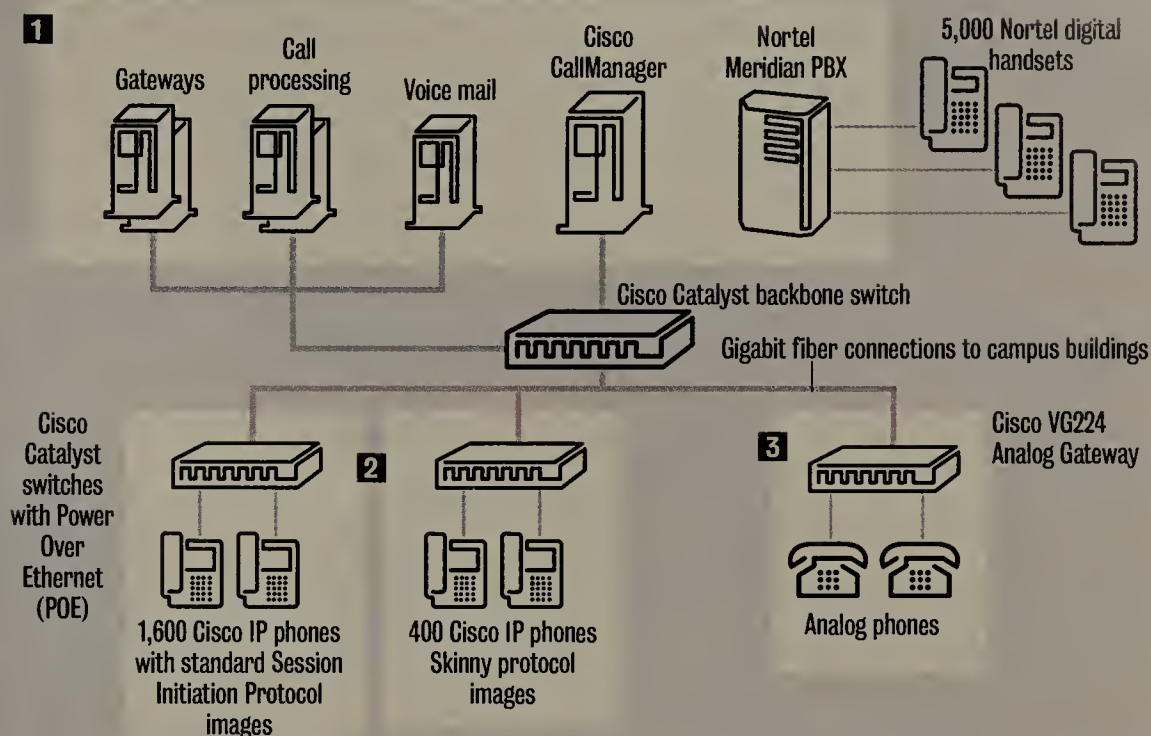
The Cisco 7940 and 7960 IP phones the school had deployed were updated with a standard SIP software image replacing the proprietary Cisco Skinny Call Control Protocol, which was used to connect the phones to the CallManagers. When the phones were upgraded with the SIP image "all we had to do was reboot the phones," in order to register them with the Asterisk server, he said.

More control over the IP PBX software and servers was another reason SHSU made the Asterisk jump, Daniel said. Because only Cisco-approved server updates and patches could be installed on the Windows Server 2000-based CallManagers, "we felt we were more susceptible to hacks," he said. "We have a lot more peace of mind with the open source system. If a bad exploit is found in SIP, we can fix it ourselves."

Besides the phones, Cisco gear still comprises a large chunk of the IP telephony infrastructure at SHSU. The entire WAN and LAN is based on Cisco routers and switches. The Catalyst switches already installed support Power over Ethernet (for powering IP phones) as well as QoS for voice traffic. All voice traffic runs separate from data traffic in its own virtual LAN segment. Additionally, Cisco VGC 24 gateway devices, which can connect as many as 24 copper/analog phones to a VoIP network, are used in dormitories and areas where just a basic phone is needed instead of a more costly IP handset.

Big VoIP on campus

Sam Houston State University is migrating its phone network off of a Nortel PBX and a Cisco IP PBX onto the open source Asterisk VoIP platform.



- 1** Redundant Asterisk servers handle call processing, public switched telephone network gateway and voice mail services in the data center.
- 2** Campus buildings are connected to the backbone via fiber. Cisco PoE switches support IP phones connected to Asterisk and Cisco voice servers.
- 3** Analog phones connect via a Cisco VoIP/analog gateway, while dedicated copper lines support the legacy Nortel handsets.

SHSU has been able to operate the Asterisk/Cisco IP phones at one-third the cost of CallManager/Cisco IP phones, Daniel said. When the digital Nortel handsets are migrated to SIP-based Cisco phones, or analog sets, another large chunk of savings will come by shutting down the electrical and cooling resources required to keep the old PBX running. "The Meridian takes up an awful lot of power. The room it's in has to be cooled to 60 degrees, and it has to have its own generator," he said.

While Asterisk and SIP lack some of the features on the Cisco CallManager, SHSU has handled the transition with few glitches. The only major feature missing in the Asterisk/Cisco phone network is secretarial functions, which let an administrator manage and answer phone extensions for multiple users. To fix this, Daniel is looking into extensions to SIP that enable multiple-line handling.

In another potential issue with open source VoIP, SHSU loses the technical support from Cisco with its Asterisk migration. But Daniel said he has been able to keep up

with support issues through mailing lists and the online community that supports Asterisk. Dell provides support on the server hardware, and Digium supports the T-1 cards installed in the boxes.

"We try to have checks and balances," among the IT staff that supports the Asterisk system, Daniel said. "We try to keep the [the Linux

and Asterisk server images] as pristine as possible." Daniel also has created copious documentation on all the Asterisk configurations and changes he's made to the software. "If someone were to have to come in and take over my job, they'd have a pretty quick turnaround on learning what needs to be done," he said. ■

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BACKSPIN Mark Gibbs

\$#&* your newsletter!

I just received yet another unasked for newsletter by e-mail. It was from a company that has a product I think is pretty good

and the newsletter started with the following spiel from the vice president of marketing:

"Welcome to our fall issue of [newsletter name]. We hope you enjoyed every moment of summer as it swept by. On my morning run last week, I felt the crisp air and was reminded that fall is well on its way.

As always, with a change of seasons comes fresh beginnings. As the school year starts, some of the excitement of a new year still rubs off on us as adults. So when the leaves turn and the temperatures fall, we sometimes feel that we have a fresh start in our worlds.

[Company name] is excited to present a fresh perspective on [product name]. In this issue of [newsletter name], we will talk about the new option for purchasing [product name] — as a hosted solution."

I quote all of this because it illustrates the kind of newsletter that companies like subscribing me to without asking. I am totally pissed off with these involuntary subscriptions! It's bad enough to get more gunge in my inbox, but when that gunge is irritating ... well, it makes you want to hurt someone.

These newsletters almost never contain anything of value. They are almost always smug, chatty, self-congratulatory, irrelevant and boring, boring, boring.

Even more aggravating are the newsletters that include, as this one did, explanations such as, "When you subscribe to the [newsletter name], you can be assured that your e-mail address will not be sold to third parties by [company name]." Isn't that nice of them?

To add insult to their stupidity, the swines make me send a reply to them or follow some link to get off their lists.

I have had it. The following memo is to all the companies that decide to subscribe me to their newsletters:

Dear Whoever Subscribed Me,

You people must be daft. I just received your latest newsletter and the most obvious message in it is that you are idiots. You talk about my subscription, but the problem is I didn't subscribe — you did it to me. Without asking.

So, for the third or fourth time today I have to follow a link to some site to unsubscribe to yet another lame, useless newsletter I couldn't give a dang about.

We all know that you want to get some kind of communication going with your existing and potential customers and we all understand that that is a tough thing to do. The problem is that unless your product runs our pacemakers or protects us from avian flu or meteor strikes we don't care. Really. We don't.

Do you think that given the gazillion news sources we have at our disposal and the hundreds of products and scores of systems we deal with, not to mention actually having lives outside of the computer world, the drivel in your newsletter is actually useful?

You are just making yourselves part of the irritating background noise of the 'Net, degrading the value of our e-mail and annoying us to no end.

You want to build lines of communication? Build them into your products. If we're using your products make sure that they inform us (in a non-irritating way) that new upgrades and services are available.

If that isn't enough, send us an announcement by e-mail, but only when you really have to. But please, don't send us your thoughts on your exercise schedule, the weather, or your wishy-washy sentiments about getting old. We get old just reading your drivel.

Take these comments to heart. Think carefully about how and why you communicate and what the value is to us. And if you continue to send me your newsletters, pray that you don't live near me or in a town that I might visit.

Yours,
Mark Gibbs

Do you subscribe to my anger? Tell me at backspin@gibbs.com or on [Gibbsblog](http://Gibbsblog.com).



NETBUZZ News, insights and oddities

Paul McNamara

You must give up one or the other — just play along with me now — so how do you intend to work and live the rest of your life?

Without the use of e-mail? Or without access to the Web?

Both will continue to exist; that's important to consider. And only you will be giving up one or the other. Not your friends, family, business associates or competitors. This is an academic exercise so there will be no cheating allowed. No instant messaging, text messaging or Web mail to substitute for e-mail. And no borrowing someone else's browser or hiring a personal valet to do your surfing.

Which one are you going to give up — and why?

Me? I'm giving up e-mail. My job would be unimaginably difficult without e-mail, but near impossible without access to the Web. Most of the communicating I do by e-mail could conceivably be accomplished by telephone (and what are those silly envelopes with stamps called again?). But I don't see any way to do my job without the Web, even though I'm old enough to have done it back when dinosaurs roamed the Earth.

Last week I put this unpleasant choice to the members of my e-mail list, the Buzzblog Brigade, and as you might expect, the Web pretty much kicked e-mail's backside — even though a sturdy minority put up a stirring defense of their in-boxes. No surprise there. What was surprising, however, was the number of respondents who cited the potential benefits of losing their e-mail privileges and the smaller subset that couldn't bring themselves to choose; it was almost as if they feared I had the power to actually take away their toys.

What follows are excerpts from some of the better replies and you can read a whole bunch more online at www.nwdocfinder.com/5111. Let's start with the minority point of view. Perhaps my favorite defense of e-mail comes from George Grenley, whose rationale will tug at the heartstrings of all but the most jaded:

"My first thought was the same as yours; I'd give up e-mail," Grenley writes. "I could use stamps, after all. But I probably wouldn't. Truth is, I never wrote letters in the pen-

and-ink days, not even to dear old Mom very often. E-mail has made me a better person; I keep in touch with old friends, as we all should."

"Give up the Web? It's great for shopping; I never go in stores anymore," he continues. "Amazon alone is a pretty good reason to have the Web. And the Web is great for scratching that intellectual itch. I settled a bet on the bone structure of monkeys once, thanks to Google and the Web. But in the pre-Web days I was an inveterate collector of catalogs, and so I managed to get much of what I needed, or at least decided I wanted, via catalogs and 1-800 ordering. I could get by with that again, if I had to."

"So, gimme e-mail, and take the Web. Mom will appreciate it."

Mark Loosli offers a more hardheaded defense of waving so long to the Web.

"Unlike you, I would give up Web access," he writes. "I work for a leasing company and do much of my financial and equipment research on the Web, so it would be difficult without it. But there are a number of avenues for the type of research I do. When it comes to e-mail, it has become much more than a true communications tool. By scanning documents I can send and receive contracts, financial reports, equipment audits, etc., that in the past were sent by overnight or by fax in a less timely and more expensive fashion."

The cost-benefit analysis works out quite differently for most, however.

"Web? E-mail? Web? E-mail? Sorry e-mail, you're toast," writes Bill Davies. "I would miss the convenience of instant contact around the world but there are alternatives and the operative word there is 'convenience'. The activities that I do on the Web could not in many cases be done in any other way."

Practicality was a theme repeated throughout the missives from those who say they just couldn't get by without a browser.

"This is an easy one — I'd give up e-mail in a heartbeat," writes Bill Dotson. "It would be a little difficult at first, but maybe the world would be a slightly better place if we were required to have actual, personal interactions now and then. . . . But I

See Net Buzz, page 65



_INFRASTRUCTURE LOG

_DAY 15: Our network's too complex to manage. We're not proactive at all; we're just reacting. Help!

_Gil brought in a crystal ball. Says he can now peer into the future of our infrastructure.

_DAY 17: I see a better way: IBM Tivoli middleware. It gives us a holistic view of the infrastructure and analyzes the relationship between apps, systems and networks. Fixes problems proactively for more uptime and more storage availability. Plus, it's open, modular and scalable.

_Gil says he saw all that too but forgot to tell us.

Tivoli.

Better manage the business of I.T. at:
IBM.COM/TAKEBACKCONTROL/PROACTIVE



_INFRASTRUCTURE LOG

_DAY 18: Everything is frozen. It's our processes. They're inflexible. We can't respond to change.

_Why did we lock ourselves in like this? Brrrr.

_DAY 19: A way out. IBM WebSphere middleware for Business Process Management. It lets us streamline business tasks. We can test our processes before we roll them out and monitor performance once they're deployed, and reuse is easy because it's based on a service oriented architecture.

_Everything's unfrozen now. Wow, it's good to feel my toes again.



WebSphere.

Take the BPM with SOA Assessment at:
IBM.COM/TAKEBACKCONTROL/PROCESS